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Senate Hearings

Before the Committee on Appropriations

Commerce, Justice, Science, and Related Agencies Appropriations

Fiscal Year 2022

117*th* CONGRESS, FIRST SESSION

H.R. 4505

DEPARTMENT OF COMMERCE
DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NATIONAL SCIENCE FOUNDATION
OFFICE OF THE U.S. TRADE REPRESENTATIVE
NONDEPARTMENTAL WITNESSES

Commerce, Justice, Science, and Related Agencies Appropriations, 2022 (H.R. 4505)

S. HRG. 117–650

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

ON

H.R. 4505

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENTS OF COMMERCE AND JUSTICE, AND SCIENCE, AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 2022, AND FOR OTHER PURPOSES

Department of Commerce
Department of Justice
Federal Bureau of Investigation
National Aeronautics and Space Administration
National Science Foundation
Office of the U.S. Trade Representative
Nondepartmental Witnesses

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COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

TUESDAY, APRIL 13, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:05 p.m., in room SD–106, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chairman) presiding.

Present: Senators Shaheen, Reed, Manchin, Van Hollen, Moran, Boozman, Capito, Hagerty, and Braun.

NATIONAL SCIENCE FOUNDATION

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. Good afternoon, everybody. We are going to go ahead and start. We are in a big room, making the assumption that everybody on the subcommittee is going to come to this hearing.

Since that is not likely to happen, at least not all at once, we wanted to make sure we had accommodations for them, and we are—we are going to start this hearing, and we are going to recess in a few minutes because of votes. We will try and go to the end of the first vote and the beginning of the second vote. So we will recess for those votes, and then Senator Moran and I will come back and finish the hearing, and hopefully Members will come in and out during this period.

So thank you very much, Director Panchanathan, for being here this afternoon. You are the first witness of this subcommittee for this Congress in open session. So we are delighted that you are here. And today the subcommittee will consider the fiscal year 2022 budget request of the National Science Foundation, and discuss the agency's role in securing U.S. competitiveness.

I really think it is appropriate that we start this year's budget hearing with the National Science Foundation, because the agency is so instrumental in our country's economic success, and given the challenges ahead of us, it is particularly fitting this year.

Much of the Nation's global leadership and economic prosperity over the 20th century and early 21st century stems from innovation which is rooted in scientific discovery, and this would not have been possible without significant public investment in research and development.

Federal R&D help drive the space race in the 1960s, the development of the Internet and GPS in the 1970s and 1980s, and the mapping of the human genome in the 1990s and early part of this century.

Without investment of significant taxpayer resources, these milestones and, importantly, all the industry's and innovations that have resulted would not have occurred.

As a country, we are now at a crossroads. Our global competitors, particularly China, are pouring resources into scientific and technological innovation. And if we want to sustain our economic prosperity, global leadership and national security we cannot afford to be caught flat-footed.

Fortunately, after several years of anemic budget requests for the National Science Foundation (NSF) under the previous administration, President Biden has requested 10.l2 billion for NSF. This is an increase of 1.7 billion, or 20 percent above the fiscal year 2021 enacted level.

While we only have limited information regarding the fiscal year 2022 budget right now, as we await the release of the full budget later this spring, it is clear that the NSF request would make important investments in research, in technology development, and in education.

The President's fiscal year 2022 request includes the creation of a new NSF directorate to focus on technology, innovation and partnerships. This directorate would focus on critical technologies that will define the next several decades. Like artificial intelligence, quantum computing, and clean energy.

Further, as part of his infrastructure proposal, the American Jobs Plan, the President proposes investing $50 billion in NSF technology and competitiveness projects. This proposal is similar to bipartisan legislation that will soon be re-introduced in the Senate, called the Endless Frontier Act.

I am very pleased that we are talking about making investments in R&D to maintain U.S. competitiveness. I think these investments are vital to our economic competitiveness and to our national security, but I also think we need to be thoughtful about how we proceed.

We should devote resources to successful existing programs whenever possible, where there are proposals to create new programs we need to ensure that the agency's task are the right ones and that there are no other agencies that are better positioned to carry out the goals, or that are already serving in the role.

As we push forward to beat our global competitors, we need to ensure that we do not lose what makes NSF so special. To this point, I am pleased to see that the President's budget request does not overlook making investments in curiosity-driven, exploratory research that sets the stage for future breakthroughs.

NSF has a fundamental role in both technology development and basic research, but no agency is better at nurturing exploratory research than NSF. The budget request includes $9.4 billion to support fundamental research and related activities, an increase of $1.6 billion above fiscal year 2021. This includes a total of $1.2 billion for climate and clean energy research as we work to reduce emissions and create energy efficiency and renewable energy jobs.

As part of these investments in research and development, we need to think about how we are training the next generation for careers in science, technology, engineering, and math, or STEM, and ensuring that we have a diverse inclusive workforce ready to lead in STEM is something that I have, and will continue to fight for in the Senate. And I think it is something that Members of this subcommittee have supported.

NSF makes critical STEM education investments in States around the country. Just last year, the University of New Hampshire received $2 million from NSF to support a new innovative project that aims to strengthen teaching curriculums for STEM subjects. To that end, I am pleased to see that the budget request includes an increase of $100 million to increase STEM participation within under-represented groups.

So, as you can see by my opening remarks, which are longer than usual, we have a lot to discuss.

So I will now ask my Ranking Member, Senator Moran, to offer his opening remarks.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Senator Shaheen, thank you for convening this hearing, and thanks for your consultation with me about its importance. And I agree with you, this is a good place for us to start as we begin our first efforts at developing a fiscal year 2022 bill writing for Commerce, Justice, and Science (CJS).

You and I have had a successful and productive relationship together here on this subcommittee. And I look forward to working with you again to produce a bipartisan fiscal year 2022 bill.

Dr. Panchanathan—I am sure I did not do that right—but I hope I am close, Doctor. I look forward to knowing you well enough in which I will get your name correct, I want to welcome you to this subcommittee.

As I indicated to you briefly before the subcommittee hearing began, it is good to have you here. I am anxious to hear your views. I think the role of the National Science Foundation is important as it—as it supports research across all scientific fields.

The proposed budget before us of $10.2 billion is a significant increase for the Foundation. It represents a $1.7 billion, nearly 20 percent increase over the budget that we provided last year. With that proposal comes some responsibility on our part and yours as well, we need to make certain—as we fund ground-breaking research, we need to make certain that the investments are made wisely, and that they can contribute to the benefit of our Nation.

Absent many budgetary deals today because of this so-called "skinny" budget, I would hope that the proposed increases will enable NSF to make strides in increasing its success rate for high quality proposals to be funded, and that it will enable much broader participation. And I emphasize this. It would enable much broader participation in basic research from institutions across the country.

I have had the opportunity to hear from researchers around the country, and they tell me there is no geographic limitations, no boundaries on where good ideas come from, quality research can be

found in all corners of our country, including Kansas, and certainly in the Heartland.

NSF has the opportunity to build up research capabilities around the Nation, and in places if it is currently not funding applications to any significant degree, we need to enlarge that base where research, technical science and engineering happens. And I hope that once we see the details of the NSF budget, that such emphasis will be evident.

While their is great excitement to increase investments in basic research, and I have been involved in a number of those here in my time in the Senate, this transition—those that we need to transition those results from that research into drivers of economic and job growth. We also cannot forget that we need a technically-skilled workforce for the jobs in the future.

NSF should be a part of preparing workers for tomorrow's jobs created by the technologies being invested in today. The U.S. will need a workforce to push the frontiers of knowledge, and that has the skills, and to thrive in knowledge and technology-intensive economy.

An example from my State of NSF taking advantage of a local opportunity is found in the Manhattan Area Technical College, Manhattan, Kansas Area Technical College, the Department of Homeland Security's National Bio and Agro-Defense Facility, soon to be open in Manhattan, is in great need of a large number of technicians trained to operate and maintain clean rooms—to maintain clean rooms, but cannot find enough qualified technicians.

Local researchers identified a nexus between this problem and work with NSF funds in undergraduate education, creating a solution that will be beneficial for years to come locally, while supporting nationally, consequential research.

Director, I look forward to hearing from you as to how you envision bringing STEM education and basic research to broader audiences in order to tap the intellectual resources of our Nation.

NSF has a long history of coordinating, convening and partnering nationally and internationally to address these complex issues, and to reach innovative solutions. But the success of NSF comes with a risk. We have seen a rise in attempts to capitalize on innovations created through NSF funding by taking intellectual property and sending it outside of our borders.

With the proposed budget increase, and other spending proposed, that risk will become even higher and potentially harder to track. It is important that NSF have clear guidelines, oversight and enforcement discover and to deter such activities. We need to be wise in how we plan to move forward and funding our engine of basic research, but bold enough to stay at the forefront of science and technology. I know that by investing in research, I know this, we are investing in our future.

Director, I look forward to hearing your testimony today, and working with you to ensure that NSF retains its place as a preeminent agency for basic research across a balanced and forward-looking, scientific portfolio.

I can hardly see you, Doctor, but it is nice to have you here. And I look forward to developing a good and solid working relationship with you.

Senator SHAHEEN. Thank you very much, Senator Moran.

And Director, I will turn it over to you. We ask that you try and make your statement in seven minutes, but if you are not able to do that we welcome your submitting the entire statement for the record. Thank you.

STATEMENT OF HON. SETHURAMAN PANCHANATHAN, DIRECTOR, NATIONAL SCIENCE FOUNDATION

Dr. PANCHANATHAN. Thank you very much. And good afternoon, Chair Shaheen, and Ranking Member Moran, and Members of the subcommittee.

It is truly a pleasure to be with all of you today. And being the first person, in-person testimony makes me feel so special about NSF. It is truly an honor to appear before you today to discuss NSF's many amazing accomplishments, and how we can accelerate innovation for the benefit of all Americans.

I would like to start by thanking this subcommittee for the continued strong support for NSF. Your support has enabled NSF to advance research and innovation, which has brought remarkable benefits to our Nation. For over seven decades NSF has played a leading role in building U.S. leadership in science, engineering, and technology, and has an incredibly strong record of investing in the brightest minds with outstanding ideas.

The Internet, 3D printing, the economic theory of underpinning spectrum auctioning and kidney exchanges, companies like Qualcomm, and even polymerase chain reaction (PCR) testing, which has been critical to the fight against COVID–19, are just a few examples of the outcomes and benefits of NSF investments.

From piloting the Small Business Innovation Research (SBIR) program in the 1970s to the world renowned, Entrepreneurial I-Corps Training Program, NSF has a rich history of fostering the innovative spirit that permeates the research enterprise.

I would also like to thank Congress for the funding in the CARES Act, and the American Rescue Plan to address the impacts of COVID–19. The research community has been integral to our ability to combat the virus.

However, COVID has had a profound impact on them, especially the early-career researchers. NSF will invest these funds wisely, helping the most-severely impacted, and most vulnerable. We are also at a pivotal time in our Nation's history. For the first time in decades, the United States leadership in science and engineering is facing intense global competition.

Other nations, especially China, are investing vast resources in basic research and industries of the future, like artificial intelligence, quantum information science, and next-generation wireless.

The United States needs to take a comprehensive approach to R&D investment that brings science, engineering, and technological innovations to market much more rapidly. Doing so requires creating engines of economic and talent development across the entire Nation, and more tightly integrating curiosity-driven research and use-inspired outcomes.

The scientific pursuit of knowledge and understanding cannot be separated from the development of new technological capabilities.

NSF's capacity to produce breakthroughs, to innovate, to cultivate the industries we cannot even imagine today, and to inspire the domestic talent needed to power our country forward must be strengthened at speed and scale.

My leadership team and I have crafted a bold vision for the agency. We must first advance the frontiers of science and engineering research into the future. Through strategic investments NSF steers the frontiers of discovery and innovation and produces breakthroughs that keep U.S. at the forefront of global leadership.

Second, we must ensure accessibility and inclusivity in STEM. There is tremendous untapped potential throughout our Nation. Every demographic and social economic group in every geographic region is full of talent that must be inspired and given the opportunity to participate in STEM.

Finally, America must lead by our actions and our values. We will work with like-minded partners who share these values, and we must and we will take the necessary steps to safeguard taxpayer investments. The foundation for this vision is partnerships. They are powerful tools to leverage resources and deliver more impactful results. NSF has a history of cultivating and fostering environments where partnerships thrive.

Over the past few weeks, the administration has released the American Jobs Plan and the fiscal year 2022 discretionary request. These proposals invest in research and development across the government. The proposals also include increased investments at NSF, including a $50 billion investment in a new technology directorate and a 20 percent increase to the NSF budget in fiscal year 2022.

The budget increases and funding for fundamental R&D will strengthen NSF's ability to champion the basic research that is critical to our future. In addition, we know there are opportunities for transformational impact in all science and engineering fields that hold enormous potential benefits.

The proposed directorate will be a cross-cutting platform that leverages, energizes, and rapidly brings these innovations to market. NSF will not abandon our current mission, or be redundant with other agencies who are doing vital work. We all know we have a large gap in bringing fantastic, innovative ideas to market and society. This is our opportunity to rapidly change that.

The budget request also invests in increasing the participation of under-represented groups in science and engineering, which is exceedingly important for our Nation. Advances in technologies, like artificial intelligence, quantum information science, and even the technologies we cannot yet conceive of will influence the global balance of power for generations.

We must commit ourselves to this challenge so that we are leaping forward and ensuring that the race for global leadership is not even close.

Thank you for the opportunity to testify before you today. With the continued support of this subcommittee and the Congress, NSF will bolster fundamental research across all fields of science and engineering and unleash rapid innovations, securing our future for generations to come.

Thank you, Madam Chair and Ranking Member Moran.

[The statement follows:]

PREPARED STATEMENT OF DR. SETHURAMAN PANCHANATHAN, DIRECTOR

THE NATIONAL SCIENCE FOUNDATION'S FISCAL YEAR 2022 BUDGET REQUEST

INTRODUCTION

Chair Shaheen, Ranking Member Moran, and Members of the subcommittee, it is a privilege to appear before you today as the 15th Director of the National Science Foundation to discuss how the agency can build upon decades of successful investments and breakthroughs to ensure that the United States remains the global leader in science, engineering and innovation into the future.

Established by the National Science Foundation Act of 1950 (Public Law 81–507), NSF is an independent Federal agency charged with the mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF is unique in carrying out its mission by supporting research across all fields of science, technology, engineering, and mathematics, and all levels of STEM education. NSF investments contribute significantly to the economic and national security interests of the Nation and development of a future-focused science and engineering workforce that draws on the talents of all Americans that creates new businesses, new jobs, and more exports.

Last year, NSF celebrated its 70th anniversary. Over the past seven decades, NSF has funded research, researchers, innovations and innovators, and world-class infrastructure that has garnered incredible benefits to the Nation. The Internet, 3D printing, the economic theory underpinning spectrum auctioning and kidney exchanges, and even the polymerase chain reaction testing technique that has been critical in the fight against COVID–19 are all examples of the outcomes and benefits of NSF investments. Many of the technologies and industries that are the focus of national conversations around competitiveness today—artificial intelligence, quantum information science, advanced manufacturing, advanced wireless and biotechnology, to name a few—are rooted in sustained NSF support for research at the frontiers of science and engineering.

THE FIGHT AGAINST COVID–19

Over the past year, the research community has been integral to the ability to combat the SARS-CoV-2 virus by modeling its structure to reveal how the virus attacks the body, creating new products to mitigate the virus's spread and developing new treatments and vaccines to combat the virus. In the "Coronavirus Aid, Relief, and Economic Security Act," or "CARES Act," NSF was appropriated $75 million for urgent research to understand, predict the spread of, and enable approaches that mitigate the negative effects of COVID–19 on public health, society, and the economy. NSF's CARES Act funds were fully obligated by September 2020. NSF has continued to make awards for COVID–19 research and has made more than 1,000 awards totaling over $200 million to address important research questions.

This funding has already yielded results for the American people. For example, a team of researchers from the University of Florida received funding to understand the transmission modes of SARS-CoV-2. The resulting study provided the first-ever demonstration that the live virus can travel through the air in a hospital room. One of the most well-known projects on COVID–19 supported by an NSF award is the ongoing operation of the Johns Hopkins Coronavirus Resource Center. The data dashboard was first released publicly on Jan. 22, 2020, to visualize and track the COVID–19 outbreak in real time, and it has since served as a preeminent centralized source of COVID–19 epidemiological data. NSF funding was instrumental in automating the collection and curation of dashboard data, broadening its data sources, and supporting data analysis and modeling research to improve understanding of the pandemic and future outbreaks.

Even as the research community rose to this challenge, COVID–19 has had a profound impact on them. Labs were closed, research field campaigns were postponed, and access to equipment and personnel was limited or impossible. Those hardest hit included early career researchers at vulnerable transition points in their careers. The $600 million entrusted to NSF through the American Rescue Plan is critically important. NSF will utilize its existing mechanisms, either through award supplements or new awards, to distribute these funds to those most severely impacted and most vulnerable. NSF will also make investments in programs that support undergraduate researchers, such as the Research Experiences for Undergraduates Sites and Supplements program. Finally, through EPSCoR and existing mechanisms that support minority-serving institutions and 2-year colleges, NSF will provide support for those institutions hardest hit by the pandemic as we support the Nation's re-

searchers and institutions so that they may continue to produce the amazing innovations that make the Nation's economy and national security stronger. I want to again thank the administration and Congress for this critical funding at this important time.

A VISION FOR THE FUTURE

As NSF looks to the future, the agency's capacity to produce breakthroughs, to innovate, to identify the industries we cannot even imagine today, and to cultivate the domestic talent needed to power our country forward will be strengthened at speed and scale.

Since my confirmation last June, my leadership team and I have developed a vision for the future of the agency comprising of three core pillars:

—Advancing the frontiers of research into the future.
—Ensuring accessibility and inclusivity.
—Securing global leadership in science and technology.

The first pillar is advancing the frontiers of science and engineering research into the future. This has been the heart of NSF's mission for over seven decades and will be further strengthened in the years to come. By seeding strategic investments, NSF steers the frontiers of discovery and innovation toward breakthroughs that put the United States at the forefront of global leadership in science and technology.

Curiosity-driven research has proven to be an engine of economic growth. Since its inception, NSF has been a foundation for industries of the future. NSF funds the high-risk, high-reward research that has the potential to bring the world new discoveries. Each year, thousands of researchers expand the base of human knowledge and, in doing so, unlock new possibilities. They have built autonomous vehicles; revolutionized our wireless networks; developed life-saving medical technologies; transformed manufacturing; and brought digital tools to agriculture. Curiosity-driven, exploratory research is a critical component to the Nation's current and future success.

Equally important to our Nation's competitiveness and success is use-inspired research, which has been a critical part of NSF's mission throughout its history. NSF fosters an environment ripe for innovation and focused on economic and societal progress. Many of today's foremost national and societal challenges—healthcare, education, climate—demand deeply multidisciplinary, multi-sector, solution-oriented research leading to science and technology innovations. We must enable collaborations spanning diverse institutions, sectors and geographies to co-create new technologies and solutions to these challenges that accelerate prosperity.

The second pillar is ensuring accessibility and inclusivity in STEM fields. This is increasingly important. There is tremendous untapped STEM potential throughout the Nation. To meet the needs of the future workforce, every person needs access to a quality STEM education. Every demographic and socioeconomic group in every geographic region of the country is full of talent that must be inspired and motivated to participate in STEM and contribute to the research and innovation enterprise. We must scale up existing pathways into STEM fields and create new tracks into science and engineering.

The third pillar is securing global leadership in science and technology. America must lead by our actions and our values. Key tenets of this leadership are transparency, reciprocity and research integrity. NSF will work with like-minded partners who share these values and commitment to advancing scientific progress and prosperity. We will take the necessary steps to safeguard taxpayer investments and to ensure everyone is playing by the same set of rules. And we will help to give our workers and companies the tools and training they need to compete on the global stage.

The foundation for these pillars is the partnerships that NSF cultivates. NSF has a rich history of not only pursuing direct partnerships with other agencies, private industry and like-minded countries, but also fostering environments where partnerships thrive, because they are powerful ways to leverage resources and deliver results. We need partnerships for accessing a broader network of ideas, innovations and experiences to address and solve real-world problems.

This vision relies on a mindset of innovation. It permeates the culture at NSF and thereby unleashes the innovative spirit throughout the research enterprise across the entire Nation.

INVESTING IN INNOVATION

On March 31, the administration released the American Jobs Plan, which will create millions of good jobs, rebuild our country's infrastructure, and position the

United States for the future. As part of that proposal, the administration proposes investing $50 billion over 8 years in a new directorate for technology at NSF that will collaborate with and build on existing programs across the government. It will focus on fields like semiconductors and advanced computing, advanced communications technology, and biotechnology. The American Jobs Plan also seeks $30 billion in additional funding for research and development that spurs innovation and job creation, including in rural areas; invests $40 billion in upgrading research infrastructure in laboratories across the country; and invests in historically Black colleges and universities and other minority serving institutions.

In furtherance of those goals, on April 9th, the administration released the President's Fiscal Year 2022 Discretionary Request, which firmly supports NSF's mission to advance the frontiers of science and engineering and aligns with NSF's vision for the future. The request includes $10.17 billion for NSF, an increase of 20 percent from the current budget. With this increase, the administration is positioning NSF to do the following:

Enhance Fundamental Research and Development

The administration's discretionary request provides $9.43 billion, an increase of $1.55 billion above the fiscal year 2021 enacted level, to support research across the spectrum of science, engineering and technology, including biological sciences; computer and information sciences; engineering; geosciences; math and physical sciences; social, behavioral, and economic sciences; and education. With this additional funding, NSF will continue to be the champion of basic and fundamental research and will strengthen it at speed and scale.

These investments will allow the agency to fund more of the groundbreaking research and support the development of STEM talent critical to our future success. Each year, NSF investments reach approximately 300,000 people at almost 2,000 institutions in every State and territory. Through their work on NSF-supported grants, students, researchers, faculty, technicians, entrepreneurs and others develop the skills and knowledge they will bring with them into the future. Over its 70-year history, NSF has done a remarkable job of supporting the brightest minds with outstanding ideas. This includes 248 Nobel Prize winners; supported entrepreneurs responsible for incubating companies; and ushered in technological revolutions. A great example is Small Business Innovation Research (SBIR) awardee SensorHound in Indiana, which is seeking to increase the reliability and robustness of cyber-physical systems (CPS). CPS technology is directly applicable to a broad range of sectors, including utility grids, smart buildings, manufacturing, healthcare, transportation, and other sectors.

The national innovation economy is powered in part by NSF programs that bring ideas from the lab into the marketplace. For example, the Small Business Innovation Research program was conceived of and piloted by NSF in the late 1970s. Today, SBIR programs across the Federal Government invest nearly $3 billion in small businesses annually. NSF also uses experiential education to help researchers gain valuable insight into starting a business and bringing an idea to market. The NSF Innovation Corps program helps entrepreneurs and small businesses understand market needs and opportunities, thus increasing their chances of successfully translating new technologies. More than 1,300 teams have participated in the I-Corps program since 2011. With expanded funding to enhance fundamental research and development, NSF will unleash additional talent, create new knowledge, and plant the seeds of future industry.

Partnerships are critically important in accelerating scientific and engineering discoveries funded by NSF to the marketplace. In addition to small business, entrepreneurship and translation programs, NSF manages the Industry-University Cooperative Research Centers to better engage industry and academia. Existing NSF innovation research alliances such as Engineering Research Centers, Science and Technology Centers, Nanoscale Science and Engineering Centers and Materials Research Science and Engineering Centers complement NSF's significant investments in fundamental scientific and engineering research. They do so by offering multiple pathways to advance discoveries to innovations, to emerging technologies.

Strengthens U.S. Leadership in Emerging Technologies

As described in the American Jobs Plan, the administration's discretionary request includes the establishment of a new directorate for technology, innovation and partnerships within NSF to help translate research into practical applications. The directorate will work with programs across NSF and with other Federal and non-Federal entities to expedite technology development in emerging areas that are crucial for the United States' technological leadership, including artificial intelligence, high performance computing, disaster response and resilience, quantum information

systems, robotics, advanced communications technologies, biotechnology, and cybersecurity.

Intense global competition and a rapidly changing technological landscape requires the United States to take a different approach to research and development investment that brings science and technology innovations to market much more rapidly. Doing so requires unleashing the potential of economies of innovation across the Nation and tightly integrating curiosity-driven research and use-inspired outcomes. The scientific pursuit of knowledge and understanding cannot be separated from the development of new technological capabilities. And, in turn, those new capabilities allow us to pursue new research questions that were either unseen or out of reach.

NSF has been investing in basic research and use-inspired outcomes for decades. A prime example is the Internet. NSF had established supercomputer centers in the 1980s and launched NSFNET in 1985 to link researchers to these resources. The computing power harnessed was the result of decades of investments in basic research in computer science, electrical engineering and many other fields, all of which happened alongside use-inspired engineering to build new computing capabilities and network capacity. NSFNET was the first large-scale implementation of the Internet technology that is the backbone of major components of our economic vitality today. As it continued to grow, it presented new practical problems that needed to be investigated—and new research questions that needed to be answered. And answering those questions allowed new solutions and technology to be designed that supported the growth of the Internet and the many different science and engineering fields that underpin it today.

As we look to the future, artificial intelligence is an example of a technology that offers tremendous promising potential across a broad range of societal and national challenge areas. NSF is the largest non-defense funder of artificial intelligence research. In addition to foundational research advancing the frontiers of learning, reasoning, planning and so on, the key to harnessing the promise of artificial intelligence is the use-inspired, translational research that links artificial intelligence and economic sectors such as agriculture, manufacturing, transportation and personalized medicine. Equally important is the investment in education and learning, including growing the human capital and institutional capacity needed to nurture the next generation of artificial intelligence researchers and practitioners. Under the administration's discretionary budget request, NSF will supercharge investments and work collaboratively with our Federal counterparts and other partners to rapidly catalyze results in areas of national importance.

Advances Racial Equity in Science and Engineering

The administration's discretionary request seeks $100 million—or roughly a 50 percent increase—in funding for programs that aim to increase participation in science and engineering of individuals from racial and ethnic groups underrepresented in these fields. Funding will support curriculum design, research on successful recruitment and retention methods, development of outreach or mentorship programs, fellowships, and building science and engineering research and education capacity at HBCUs and other minority-serving institutions.

Advancing racial equity requires that NSF look internally at our own policies and practices as well as externally at how the agency's policies and programs impact the research and innovation enterprise. As I mentioned earlier, my vision for the agency includes a central pillar of ensuring accessibility and inclusivity. That is why, shortly after becoming Director, I established an internal Racial Equity Task Force to ensure the agency addresses racial inequities and works to identify and remove any barriers to opportunities both internally and externally. That task force recently submitted their preliminary recommendations to me, and I look forward to sharing the steps that NSF plans to take with the committee over the coming weeks and months.

To be successful in continued global leadership in science and technology, domestic talent needs to be inspired, nurtured and advanced across our nation. The future depends on investment in inclusion, in diversity, in training of STEM teachers, and in inspiring the next generations through formal and informal learning. Continued global leadership also requires investment in the next generation of scientists trained to pursue questions beyond the traditional scientific disciplines. NSF is investing in education research across all levels of learning—from preK–12 through graduate education and beyond—which then informs education and training programs to better develop skill sets in cutting-edge technologies, promote highly collaborative team science, and foster greater diversity in the workforce. NSF will continue to invest robustly across its suite of broadening participation programs. In so doing, NSF will work tirelessly to ensure that there are no barriers to equal oppor-

tunity at NSF or in the delivery of its programs. These investments will be central to our ability to achieve those goals.

Advances Climate Science and Sustainability Research

The administration's discretionary request provides $1.2 billion for climate and clean energy-related research. NSF will fund a broad portfolio of research related to climate science and clean energy, including research on atmospheric composition, water and carbon cycles, modeling climate systems, renewable energy technologies, materials sciences, and social, behavioral, and economic research on human responses to climate change.

NSF has been investing in the fundamental research at the heart of global climate issues for several decades. Long-term, continuous, and consistent observational records are a cornerstone of global climate science and resilience research. NSF supports a variety of research observing networks that complement, and are dependent on, the climate monitoring systems maintained by our Federal partners. The results of NSF investments have helped us understand climatic phenomenon, and helped communities address challenges associated with mitigation, adaptation, and building resilient futures.

For example, NSF played a major role in the Tropical Ocean Global Atmosphere (TOGA) program along with NOAA and NASA to understand coupling between the atmosphere and the ocean. Foundational to our current understanding of complex climate systems, TOGA directly resulted in improved theoretical understanding and dynamic modeling of the El Niño Southern Oscillation (ENSO) cycle. Operational centers use dynamical models in their suite of tools to provide routine seasonal forecasts of immense practical value to society at large that have saved lives.

NSF's investments in research impact nearly every aspect of America's clean energy future—from fundamental physics, chemistry, and materials science to large-scale systems engineering and cyber-infrastructure. NSF's clean energy investments support innovative interdisciplinary research related to sustainability science and engineering, such as the conversion, storage, and distribution of diverse power sources (including smart grids); the science and engineering of energy materials, energy use, and energy efficiency; and the ways that people think about and use energy. Clean energy investments also create vital research and education partnerships in science.

Continues Construction of Major Research Facilities

The administration's discretionary request invests in the continued construction of major NSF research facilities, including long-term upgrades of NSF's major Antarctic infrastructure. It also supports construction of the Vera C. Rubin Observatory to enable astronomy research. In addition, the discretionary request seeks funding for the construction and procurement of smaller research facilities and equipment across the Nation.

NSF invests in world-class research facilities, instrumentation, and capabilities to ensure that researchers have access to the most cutting-edge scientific equipment. Through the Major Research Equipment and Facilities Construction projects, NSF has built the world's most powerful solar telescope, transformative optical and radio telescopes, state-of-the-art research vessels, and complex facilities in the harshest environments, including at the South Pole.

With the introduction of the Mid-Scale Research Infrastructure program, NSF is investing in smaller scale, but equally important research infrastructure and filling a vital need for the United States research and innovation enterprise. The Mid-scale Research Infrastructure program is aimed at transforming scientific and engineering research fields as well as inspiring STEM talent. The need for this program has been recognized by stakeholders in the scientific community and by Congress in the American Innovation and Competitiveness Act of 2017. Mid-Scale Research Infrastructure can also serve as a proving ground for new and innovative major research facilities.

CONCLUSION

At a time of intense global competition, NSF is prepared to lead the nation in innovation, discovery, and STEM education to help build a diverse and inclusive workforce to unleash economic and societal progress. NSF is well positioned to identify emerging opportunities and innovate to create future opportunities to unlock their potential for American people. Every day, we benefit directly from NSF-funded advances, from the technology that powers our smartphones and the capabilities that connect them, to improved weather forecasts, to a better understanding of the world around us.

The United States is focused on leadership in science and technology and leaping ahead of the competition into the future. That leadership is built upon a uniquely American innovation system in which sustained investment in research innovations is intertwined with a strong partnership among government, academia, and industry. This public-private partnership has ensured the United States as the world leader in discovery and innovation for decades and will no doubt propel American leadership well into the future. Fields such as artificial intelligence and quantum information science hold the promise of incredible job growth, prosperity, and strengthened national security. A robust, sustained commitment and expansion of this American system of foundational and use-inspired research and innovation will be crucial to seek continued preeminence in science and engineering.

Thank you for the opportunity to testify before you today. With the continued support of this Committee and the Congress, NSF will unleash rapid innovations, creating ecosystems of prosperity across the Nation and securing our future.

Senator SHAHEEN. Thank you very much for your testimony, Director.

We are going to open it up to questions. Unlike usual, we will not take people in order of arrival, but take them in order of seniority because we expect some people to be coming to us remotely. So I will begin.

COMPETITIVE RESEARCH PROPOSALS FUNDING LEVELS

Director, we do not have a lot of details at this time on the 2022 budget. So I want to ask more about what the agency is doing currently. Can you tell us what percentage of competitive research proposals NSF currently funds?

Dr. PANCHANATHAN. Thank you. We fund about 20 percent on average of proposals that we receive.

Senator SHAHEEN. I think 20 percent, you said?

Dr. PANCHANATHAN. About 20 percent on an average across several years.

Senator SHAHEEN. And what percentage of total proposals—are highly meritorious as determined by reviewers?

Dr. PANCHANATHAN. About one-third of the proposals that we receive are deemed as highly meritorious and worthy of investment.

Senator SHAHEEN. So you have about 10 percent that you receive that you are not able to fund.

Dr. PANCHANATHAN. That is correct.

Senator SHAHEEN. Do you have any way to quantify what kinds of opportunities were missing by not being able to fund that additional 10 percent?

Dr. PANCHANATHAN. These are fantastic ideas that we are leaving behind. And my worry is that when we leave behind these ideas, somebody else picks up on those ideas, namely, our global competitors. We cannot and must not leave those ideas to be taken by anybody else. We should be investing in them and advancing those technologies so that we might create the many, many companies, and industries, and societally-meaningful innovation outcomes that we realize here, right here in our Nation.

GRANTS

Senator SHAHEEN. Thank you. And what is the average length of an NSF grant?

Dr. PANCHANATHAN. Typically 3 years, around 3 years is our average.

Senator SHAHEEN. And is that normally the time that the researcher needs in order to do the—to get the conclusions they are looking for?

Dr. PANCHANATHAN. Typically the researcher, having been a researcher myself, and having had graduate students in my team, typically, I would say a 4- to 5-year timeframe would be the most optimal because PhD students typically take that length of time to complete their research work.

Senator SHAHEEN. And what is the average size of an NSF grant?

Dr. PANCHANATHAN. Currently it is about $200,000.

Senator SHAHEEN. And is that the average that people ask for, or is that the average that you were able to provide based on funding?

Dr. PANCHANATHAN. Based on funding, that is the average, typically, that we are able to provide, and people do know what is the right size to ask for, although they know that it is not the size that would, essentially, express their talent and ideas in the best possible way; so a current average, ideally, would be about $300,000 for a grant because we have not increased this in several years.

Senator SHAHEEN. Great. So you say several years the last time that this changed? Do you know?

Dr. PANCHANATHAN. Changes have happened over the years, but if you look at the cumulative lag, you would say that we ought to be at the size of $300,000 rather than the small increases that we have been able to provide over the years.

Senator SHAHEEN. So you would recommend increasing the size of the awards if we can?

Dr. PANCHANATHAN. About a 50 percent increase in the award size is where we should be in order to be able to execute the work that is being proposed.

Senator SHAHEEN. So if today you were going to be able to fund every meritorious proposal that came before the agency, how much additional funding would you need? And——

Dr. PANCHANATHAN. Today——

Senator SHAHEEN. And if you were also able to increase it to that $300,000?

Dr. PANCHANATHAN. Today, if you were to take these factors into consideration, where we are able to fund all the proposals that needed to be funded, which are highly ranked, there is 33 percent success rates, approximately. The duration being about four to 5 years, and the size being about 50 percent more to, let us say, $300,000, and you are now talking about a doubling of the size of the existing budget, because that takes us to about $8 to $9 billion of great ideas and talent that is left behind.

And this is why the current proposed budget increase that the President has put forth in the fiscal year 2022 budget, as well as the American Jobs Plan, are excellent frameworks, because what happens is that not only are these ideas, that are important, Chair Shaheen, it is also that these ideas further have to be brought to the market, and there is a lot of gaps that have to be addressed.

Now, if you start to bring those programs like I-Corps, Small Business Innovation Research and Small Business Technology Transfer (SBIR/STTR), our new innovation centers and accelerators

that you need to build in order for us to be in the vanguard of competition, then you are actually looking at probably doubling that, even more. It is almost like a quadrupling of funding. And that is why this aligns with the American Jobs Plan, as well as the Endless Frontier Act in terms of concept. The spirit of the Endless Frontier Act is very much aligned with where we need to be as a nation so that we don't miss out on these important ideas, and not let any other country take advantage of us.

Senator SHAHEEN. So, do you feel like you have the authorities you need currently, and it is just a question of resources?

Dr. PANCHANATHAN. Yes. Resources will be the most important thing. And then comes with that, the kind of frameworks that we are talking about. For example, we have proposed the crosscut of a directorate of technology, not a separate directorate, but a crosscut that further enriches the science and technology innovations, but also leverages, and energizes the technology innovation and brings it to market right away, and brings it to, societally, good initiatives right away. This is what we need to do more of, I call it: strengthening at speed and scale.

Senator SHAHEEN. Thank you.

BROADENING PARTICIPATION

Senator Moran.

Senator MORAN. Dr. Panchanathan, as I said in my opening statement, and I will try to flesh this out a bit more, as you would know, just 10 States receive more than half of all NSF award funding. I think it is important for us to ensure robust, academic research across the country, opportunities for all students.

In my own State of Kansas one of my goals, as a citizen, and perhaps as a Senator, is to see that we emphasize research, science, mathematics engineering. And I want the students who grow up in Kansas and attend Kansas universities I want them to have the opportunity to participate in nationally-important research.

Each State, no matter how small, has something to offer our Nation, and has the talents and expertise to contribute to our country's research. How do you plan to address? And I know the Established Program to Stimulate Competitive Research (EPSCoR) is one way, but it is such a small component of the overall research budget at NSF. How do you plan to address broadening the participation across the country in terms of opportunities that are currently being missed because of the nature of the way the program is administered?

Dr. PANCHANATHAN. Senator, thank you. You know, when I came to NSF I laid out a vision, three pillars. The central pillar, which I will focus on, I call it: accessibility and inclusivity. Talent and ideas, as you rightly point out, is everywhere across our great Nation. It is therefore our responsibility to ensure that they are given the environments that are going to bring out the talent at speed and scale.

How do you inspire, nurture, and motivate talent everywhere? This is the time that we need the domestic talent at the highest level of intensity to make sure that we are leaping forward ahead of our competition.

So, to specifically address your question; when I came in, we were launching the AI Institutes program, and I immediately said, "AI institutes" has to be "AI in every State." Every State of our Nation has AIe expertise either already available, or we have an obligation to train the AI expertise because AI is going to be part of us. It is like electricity in the future. It is part of us. It is part of everything that is going to happen. So we want the talent to be trained everywhere. We want the talent to be nurtured, as well as ideas to be nurtured and connected everywhere.

You are right about the fact that EPSCoR program can be an augmentative additive, but it cannot be the only vehicle for ensuring that we have talent ideas across the Nation inspired and nurtured.

So NSF is doing everything to make sure that these programs, like AI, and even the quantum, we are talking about a national quantum platform, which means any, a 5th grader, or an 8th grader who is inspired by STEM from Manhattan, Kansas, can dial into the quantum platform and be inspired by that. And that way they get to build their STEM talent and contribute to the great State of Kansas and our Nation.

And, more importantly, as the STEM talent, in your opening remarks you mentioned, the skilled technical workforce that is being developed out of community colleges, out of 4-year colleges, out of research universities, we need all of the above in order to be able to bring out, bring forth the businesses of the future. We need to have in every area, every region of our country, those areas that are best for that particular region.

Let us speak, for example, in Kansas. Where else would you do agriculture as a smart agriculture of the future than a State like Kansas? That you will build an ecosystem around agriculture in a State like Kansas, working with other States like Iowa and others, working together, creating an ecosystem of prosperity, jobs, new industries, and entrepreneurial environments. This is the kind of thing that we need everywhere in our Nation.

And NSF is going to be working really hard. And when I made the comments, the chair's question about the funding, this is where I think NSF is very well positioned and unique as an agency to be able to nicely synergize the curiosity-driven research, and the use-inspired outcomes, and generating the industries of the future.

I will leave you with this last comment. NSF is not only thinking about taking AI Quantum, which are the industries of today, or tomorrow, but we are also working on the future of the industries of the future.

What is going to be that industry like AI is today in 2035 or 2050? That is what NSF makes possible. Why? Because AI was an investment made at NSF for the last four or five decades, and today we are seeing the fruits of it. Not only what NSF is able to advance, but also what other agencies and industries are able to advance, this is what makes NSF unique and powerful, and we should take full advantage of such an agency, and its potential, and what it can do for our Nation.

EXPANDING ACCESS

Senator MORAN. Doctor, I am out of time. I will ask just a follow-up question, and hopefully we will have a chance to ask additional questions later. But if we are successful, if we support, Congress supports, the Senate, the subcommittee supports additional funding for NSF, would I see a different result than 50 percent of the research funding going to 10 States? Does it come with that additional resources? Will there be something different?

Dr. PANCHANATHAN. So, Senator, I can answer it to you very directly. When I came into the agency, I came from the State of Arizona. I know first-hand what every State can do, small or big, for our Nation and that we are missing a lot of talent and ideas right now. I know that. I have first-hand experience having seen that.

And I know that when you provide the right environment for those ideas and talent to manifest and express, we can realize unbelievable progress and prosperity for our Nation.

So I am committed. I am committed. And that is why I say my central pillar is about advancing inclusivity and accessibility. I am committed to ensuring that these regional prosperity innovation centers are everywhere across our Nation. So you will see that in action.

Senator MORAN. Thank you, Doctor.

Senator SHAHEEN. Thank you, Senator. We will now recess, hopefully until—for about 20 minutes or so, while we go do our two votes.

So, thank you, Director.

Dr. PANCHANATHAN. Thank you, Chair, and Ranking Member.

[Recess.]

Senator SHAHEEN. This hearing will come back to order.

I think Senator Moran will be here shortly. But why don't we go ahead and begin.

Director, we thought we had Senator Manchin remotely, but he has stepped away so, hopefully, he will come back, and we will get a chance to go to him. But in the meantime, I am going to go ahead and ask some additional questions.

TIP

So we talked a little bit, I did in my opening remarks about the proposal that would create a new National Science Foundation directorate focused on technology development. And it is an idea that is also in the Endless Frontier Act that the Senate is expected to take up soon. The directorate would be focused on 10 priority topics. Some of them you mentioned that you are already looking at, but those include AI, quantum computing, robotics, clean energy, and President Biden's infrastructure plan proposes investing $50 billion in this new technology directorate.

So can you talk about whether you need any authorities to do the kinds of things that the new directorate is proposing? And how would the creation of that technology directorate benefit NSF? Or what kinds of challenges would it present to NSF?

Dr. PANCHANATHAN. Okay. So, as I said earlier in my comments, this directorate that we are going to build is going to be a cross-cutting directorate, which means that it does not stand alone, but

actually leverages the technologies that are being sourced out of the various science directorates.

Let us take AI and quantum and others. These were decades of basic research investments that have gotten us to the point where we have the maturity in some of those cases that they can be transferred into technologies that then positions us in a very highly competitive way at speed and scale.

Otherwise these things take a long time to develop because of the nature of the curiosity-driven research and use-inspired research being highly synergistic, it is possible to take these out very rapidly if only there is a tight integration between the two.

And that is why the crosscut is very helpful. So that, as I said, it leverages those technologies, it also contributes to advancing future technologies. And in the crosscut, we are able to take those technologies through various programs, like the I-Corps program, or the SBIR/STTR program, or new programs like innovation accelerator programs where you have a public-private partnership model, where academia, industry, and the community, and others work together in building ecosystems of excellence in various parts of our Nation, so all of these things can be done through this directorate.

So, what is proposed in the Jobs Plan by the President recently, as well as the Endless Frontier Act legislation, potential legislation, so what these things give you is the spirit of what we are trying to do, at speed and scale, can be accomplished by these activities. So the new activities that we need to do require us to be able to get those things done when—and I am talking about the crosscut directorate—the appropriate flexibilities that are given to NSF and it is important for us to be able to execute on them.

And when we have those flexibilities, I am confident that we will be able to execute them. And there are many examples here that we will draw from, may not be necessarily replicating them. The Defense Advanced Research Projects Agency (DARPA) has talked about—or other kinds of agencies that have transformational programs, including NSF, can be taken into consideration in terms of building the new models that we need to build in addition to scaling our existing models. So we will need both of those happening at the same time.

COLLABORATING WITH OTHER AGENCIES

Senator SHAHEEN. So, earlier today we had a hearing in the Defense Appropriations Subcommittee, and we heard from representatives from DARPA, and from the research and engineering aspect of DOD. And one of the things they talked about is the work that they are doing on quantum computing, on AI, on basically the same list that you ticked off earlier.

So can you talk about how you work with the other agencies within the Federal Government that are also working on similar kinds of research, and innovation, and how do you avoid overlap in the work that is being done?

Dr. PANCHANATHAN. So partnership is a very, very important imperative for me. When I talked about the three pillars, I said the foundation of the pillars is partnerships, partnerships of every form, of every type is very, very important for us to advance these

technologies. And one of the first things that you partner with is fellow agencies who are also working on these technologies, but with a specific focus.

One of the things that makes NSF unique is that it has the basic science and technology platform, all of which can be translated into technologies of the future. And there are focused technologies; for example, in the case of the Department of Defense, defense-related technologies.

So where there is opportunity to partner, NSF will be partnering with all those agencies. I will tell you. When I took office in July of last year, the first couple of weeks I picked up the phone and talked to almost every leader of various agencies so that we might partner even more, I told them, not only what they are already doing, but partnering at a macro scale around these topical and thematic areas, be it AI, be it quantum, be it climate, be it advanced manufacturing, to find the appropriate partners.

Because I think we need to partner and leverage our individual expertise, but with uniqueness in each of our agencies in NSF, to be able to take all those technologies that are out there and bring them to market as rapidly as we can.

That is what we need to do at NSF. And some of those, for example, energy technologies, clearly, can be in partnership with the Department of Energy, and there is value in doing that.

Senator SHAHEEN. I want to come back to that question. But I am out of time. And so let me go to Senator Hagerty, and then I will come back in the next round.

OFFICE OF SCIENCE AND TECHNOLOGY POLICY R&D GOVERNMENT EXPENDITURES

Senator HAGERTY. Chairman Shaheen, thank you very much for hosting us today.

Director, thank you for being here.

This is a critical area for us. The United States spends billions upon billions of dollars in research and development, we do it each year with government agencies that range from your agency at the National Science Foundation, the Department of Energy, and the Department of Defense. The Office of Science and Technology Policy is charged with coordinating all of this, this effort, so that it is estoppel, so that it is strategic.

But unfortunately so many times we see our agencies get siloed in their efforts. You talk about partnerships, and I am delighted to hear you doing that, because I want to make certain we are making the most of our research and development expenditures, and not duplicating or competing in areas where we ought not to be.

In an attempt to solve the problems of some of our Nation's most serious challenges, when you talk about artificial intelligence, you talked about quantum computing, when I think about biotechnology, advanced manufacturing, we want to advance as rapidly as possible. We do not want to be left in any position other than first in the world.

And I want to make certain as we do this, we know very well what we are doing as a Nation. Earlier, last year and the beginning of this year, Congress worked on a bipartisan basis to enact

the Industries of the Futures Act, it was enacted on January 1 of this year.

And that law charged the Office of Science and Technology Policy with providing Congress with an assessment and a set of recommendations that would relate to our investments in research and development. And that report is due to us on May 1st. And it is supposed to take a broad view of the full expanse of government R&D expenditures.

I would like to know first, Director, has the National Science Foundation been participating in this report? And if so, what are you learning?

Dr. PANCHANATHAN. So, Senator, thank you for asking this question. So basically what we found when it came to NSF is, that there is already a very strong partnership within NSF and the Office of Science and Technology Policy (OSTP). I found that.

Senator HAGERTY. Yes.

Dr. PANCHANATHAN. And I have further strengthened this partnership, because as you rightly point out, OSTP is a coordinator of sorts, you can think of it that way, in terms of making sure the agencies can work together even more strongly in addition to what we reach out and do ourselves.

So we are working with OSTP very closely, and including the AI activities. And it is our intent to make sure that we will have a significant contribution in the report that you mentioned. And that is the way we operate. And we have co-chaired, as you know, as part of the NSTC, we co-chair the AI Task Force, NSF participates very, very actively in that, in that activity.

MAY 1 DEADLINE FOR OSTP REPORT

Senator HAGERTY. Is your sense the administration will make the statutory deadline, the May 1st deadline?

Dr. PANCHANATHAN. I have no knowledge of that. I am happy to find more details, but we do not have any knowledge of that, Senator.

[The information follows:]

At this time NSF does not have more details to share about OSTP's plan regarding their reporting requirements under the Industries of the Future Act.

Senator HAGERTY. Well, one thing I want to make certain that you agree with is that it makes sense that we understand how much, where, and exactly the precise nature of Federal Government expenditures, and how we are allocating those expenditures today before we begin to add billions of more dollars to those expenditures.

Dr. PANCHANATHAN. Can you—can you repeat the question? I——

Senator HAGERTY. From a timing standpoint, do you agree that we ought to have the benefit of this report so that we can understand precisely where and how we are allocating our research and development resources before we begin to add more, billions of dollars there?

PARTNERSHIPS

Dr. PANCHANATHAN. Senator, as you know, I can only talk about what NSF can do in terms of what we are doing in AI. And I can give you some examples of what we have been doing in AI, because you specifically addressed AI.

Just last year we launched seven AI institutes, and now at this time we are launching eight more institutes and we put the call out. And one of those calls is made possible because of our strong partnership with industry. I mean, we have Amazon, Google, Accenture, and Intel, we went to them and we said, "How might we work together to build a $20 million partnership, and each of these institutes is a $20 million scale."

So now instead of seven institutes, they are going to be launching eight because of the partnerships.

Senator HAGERTY. Yes.

Dr. PANCHANATHAN. So if we are doing everything at NSF to see how we might, through partnership——

Senator HAGERTY. Leveraging the private sector, so, yes.

Dr. PANCHANATHAN. Leveraging partnerships to see how we can scale the AI activities, the quantum activities. You know, we work very closely with other agencies in AI, including the Department of Energy. For example, in quantum we launched the institutes together with them. So we will be doing everything at NSF.

Senator HAGERTY. Yes.

Dr. PANCHANATHAN. To partner, partner, partner with industry, with other agencies, with communities, so that we might leverage the assets that we have at NSF to produce the best outcomes in terms of unleashing ideas and talent.

Senator HAGERTY. I think that is going to be absolutely critical because the magnitude of the increase that we are talking about here is going to far exceed your current infrastructure. And if you do not have the ability to leverage and coordinate well, I think we are going to have a serious challenge in your hands. You do have a serious challenge with what is coming down the pike. We are challenged as a nation from a technology standpoint.

So I wish you the very best as you approach this challenge and encourage you to continue to exercise these partnerships in an aggressive manner. Thanks.

COMPETITION

Dr. PANCHANATHAN. Thank you very much, Senator, for the question. I agree with you, our competition, as I always say, the moment we look back and check our competition that is not a good thing. We should be leaping forward so far ahead that our competition is not something to even bother to check back.

And that is the position that I would like us to be in. We have always been the vanguard of competition, and now is the time for us to accelerate. Again, I will repeat the tagline I use all the time: strengthen at speed and scale. We need to be leaping forward, and at NSF we are focused intensely on that, intentionally and intensely to make sure that we are leaping forward in progress, and that the support of Congress, and support of all of you, is very vital for us to get there.

Senator HAGERTY. Thank you, Madam Chair.

Senator SHAHEEN. Thank you, Senator Hagerty.

I think we have Senator Reed coming to us remotely, virtually.

EPSCOR

Senator REED. Hi. Thank you, Madam Chairman.

And, thank you, Director, for your service at the NSF, which is a critical agency. And I have always been a strong supporter of EPSCoR and its key role at NSF, and I have also tried to expand it to the Department of Defense and Department of Energy.

But can you describe in your restructuring and expansion of NSF, how you are going to ensure that EPSCoR States like Rhode Island, are full participants in the research and technology development envisioned under these changes. And is there anything we can do to enhance those efforts?

Dr. PANCHANATHAN. Thank you. You know, when I was talking about my central pillar of my vision when I came into the agency, which is focused on inclusivity and accessibility, I feel talent and ideas are across the Nation in every part of Nation. That is the fantastic thing that we have in our Nation. The domestic talent and the ideas that we have, that we creating every day, domestically, is just fantastic.

How do we tap into the potential of ideas and talent? How do we nurture the talent? How do we make this talent possible to take real form so that we might create the industries of the future, the entrepreneurial activities of the future, so we might have the impact that we desire to have?

And that is not only what we do with EPSCoR programs, having as an augmentation effect of ensuring that we do much more in terms of specific technology focus areas, but I would like to see that we will nurture talent everywhere as part of the mainstream activities at NSF, and push us forward into the future.

At the same time I would also like to make sure that the regional innovation accelerators are everywhere, everywhere across our Nation. And this requires not only the EPSCoR support being augmentative, but the mainstream activities of NSF are going to make all of these things possible in all parts of our Nation.

And so I am committed to that. And I know that we can get this done because of all the support that the Congress is providing, and will provide into the future, and the administration is providing. And again, you know, the thematic activities, like what EFA provides, and the American Jobs Plan provides, I think is the perfect timing for what we can do into the future in terms of accelerating all of this, and making sure that progress happens across our Nation, everywhere geographically.

SMALL BUSINESS

Senator REED. I think one of the other advantages, Mr. Director, of EPSCoR is that it tends to reach out to the small, innovative companies that have relationships with university communities throughout the United States. So this, I believe, would be another effective way of mobilizing small business, which in many respects is the most innovative parts of our economy. And I think—I hope you share that feeling.

Dr. PANCHANATHAN. I definitely share the feeling Senator, because that is why when I talked about the SBIR and STTR programs, these are rich programs that we can further expand and scale to have even more impact in terms of what we can do for various companies, small businesses, to not only grow and scale, but then through that, actually inspire more new companies, and more new entrepreneurial ventures happening in every State.

Like the State of Rhode Island, I have had the good fortune of being part of shaping the Innovation Campus idea in Rhode Island, partnering with the University of Rhode Island when I was in Arizona.

So I know the potential and the promise that is there in the State of Rhode Island, for example, that I know is everywhere across our Nation. It is in Arizona where I came from. So I know it is everywhere and it is for us to make sure that we are ensuring that the talent is nurtured and brought to life. We are ensuring that these small businesses and entrepreneurial ventures are given a chance to scale and succeed.

Senator REED. Thank you, Mr. Director.

Thank you, Madam Chairman. Thank you very much.

Senator SHAHEEN. Thank you, Senator Reed.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you, thank you, Madam Chairman, and to the Ranking Member.

Mr. Director, great to see you here. As you know, the State of Maryland is a great engine of research and technology in the United States, home to many Federal agencies, had two large academic research institutions, lots of other important assets. And I was pleased to hear your enthusiasm for both the American Jobs Plan, and also the budget that is been submitted by the Biden administration, which is, as the Chair said, is important to making sure the United States maintains an edge and does not fall behind.

And I think all of us do worry that if you look at the global numbers and our share of R&D we are slipping, potentially, farther behind if we don't act. In 1960 the United States contributed close to 70 percent of global research and development investments, by the year 2018 we accounted for about 27 percent of those investments.

As you know, in 2015, China launched the Made in China Initiative. You have mentioned China's efforts in your testimony today. That was a strategic plan to try to promote and become dominant in certain technologies by the year 2025. And they now represent about 26 percent of global investment in R&D. So we are really at a, I think a tipping point here in the United States. And that is why it is so essential that we move forward.

Senator Roy blunt and I are going to introduce this week, something I call the National Strategy to Ensure American Leadership Act, the SEAL Act, where we are going to ask—ask the National Academy of Sciences, Engineering, and Medicine, to look around the corner a little bit, as you say, and identify areas where the United States has to focus in order not to get caught behind.

And obviously NSF will play a critical role in whatever findings they make as part of that effort. One of those areas that we know of now is, of course, quantum information science. And the Univer-

sity of Maryland, NIST, ARL, IonQ, these are all Maryland entities that are very engaged in that space.

President Biden's budget includes a proposal for a new NSF directorate to expedite technology development in areas that are critical to our competitiveness. How do you envision that sort of unfolding, and what role do you see for quantum technologies within that new directorate?

QUANTUM TECHNOLOGY AND TIP

Dr. PANCHANATHAN. Thank you. I see quantum as one of those technologies that is very, very important and vital for us to ensure that we are far ahead of any other nation. We have the capacities to do that simply because of the fact that all aspects of quantum information science have been what NSF's investments, and other investments, have made possible over several decades to get where we are today.

So we should be leveraging every bit of that set of investments and translating them as quickly as we can, as well as building newer technologies and newer ideas around science, engineering, and other realms, so that quantum might be something that we will be, as I said, far ahead of any others.

With respect to the technology directorate that you mentioned, this is the purpose of the technology directorate, is that it might take these early ideas and technologies that are emerging, quantum being one of them, AivNO is another, and biotechnology is another, and we can go down the set of technologies that are emerging, and some are just yet in the labs, what I call: How do we take the bench ideas to benefits? They are still in the lab.

How do we take all these technologies, and the technology directorate, therefore, is how do we leverage these technologies that are emerging from the science directorates? How do we then energize the activities in quantum even more so that we are ready for the next set of ideas that are coming out, next set of technologies that are coming out, even in the quantum realm?

How do we then take those ideas and then quickly translate them into entrepreneurial ventures? How do we work with companies so that the companies then can be more competitive than ever before? How do we develop regional ecosystems of prosperity around quantum where it is most ideally located in our Nation?

All of these things have to be done. And that is why we are really excited by the fiscal year 2022 budget request, the American Jobs Plan request, as well as the concept of the Endless Frontier Act, which is all talking about how we might leverage what we have already invested in over several decades in the United States and leapfrog into the future.

Senator VAN HOLLEN. Thank you.

Dr. PANCHANATHAN. You rightly point out about the competition. And I agree with that.

Senator VAN HOLLEN. Thank you, Mr. Director. I see my time is short, so I am going to mention a couple of things, maybe you can get back to me on the record. One is in order to maximize our potential we need all of our scientific sort of players on the field here. We need everybody involved. HBCUs have been under-represented when it comes to NSF investments in the past, even though 25 per-

cent of African-Americans earned their degrees in STEM at HBCUs that look forward to your strategy for addressing those issues.

Also the labs impacted by COVID–19. And finally, some information on alternative protein research which a lot of people have been looking into. So I will be submitting questions for the record on those topics. So, thank you.

Dr. PANCHANATHAN. Thank you, Senator. We will be happy to answer all of those.

Senator SHAHEEN. Thank you very much, Senator Van Hollen.

Senator Braun.

SPENDING PLAN FOR BUDGET INCREASE

Senator BRAUN. Thank you, Madam Chair.

I don't want to repeat what was, maybe, already discussed, but in the time I have been here, which is a little over 2 years, I think we are probably at the most perilous point, in my observation, of what I was concerned about before I got here. And that is how we continue to do the things that are most important for the American public and do it in a way that we honestly can say it is going to be there down the road.

And I know what you do, and the amount of dollars we are talking about, and this does not hardly register anymore when the new denomination is trillions, but I do think it is always worth mentioning that even for good functions like this, or the NIH, which to me is investing in something that is about as close to being tangible as you can get. But I think it is in peril in the mid—in the long run, when we do not exercise the political will around here to rein in what is now a trillion-dollar structural deficit, a trillion dollars.

And if you look at what we have added to our balance sheet just through COVID, to me some of that was obviously necessary, but a lot of it you can argue that it was not absolutely necessary. And all of that puts us in peril to where, when we are no longer the reserve currency the pain starts to come in immediately that may not occur for a while when we do fully deplete the Medicare Trust Fund, and maybe the Social Security Trust Fund, which I think is earmarked for early in the 2030s, that is what bothers me.

So, when I look here, in terms of what is being requested, from the $8.5 billion up to $10 billion, or even $50 billion that to me seems like a very reasonable figure, even at the higher amount. But when it is in the context of how we run this place, in general, I think it is incumbent for any one of us when we are interested in and really like something, and it makes sense, especially this, which I consider an investment, that we cannot lose sight of where we are at in general, and especially the American public understanding it.

I think there was some discussion earlier about how you would ramp up when you would take either, or roughly, 15 to 20 percent increase, let alone afford a 500 percent increase. How long would it take for you, actually, to build up to where you had enough critical mass to actually spend that kind of money if, in fact, it fell into your lap?

Dr. PANCHANATHAN. Thank you, Senator. The first thing I wanted to say is, this is an investment with a return on investment.

And I want to start with that so that you know I appreciate the point that you made, absolutely.

When you look at the Digital Libraries project that was funded by NSF in the early-1990s, and a couple of years later we had a final report on the project, which said that we are launching the company Google. That was the final report on that project that NSF received back. And we know that it is one of the companies that is competing fairly and squarely and far ahead and keeping us ahead. Likewise, Qualcomm was an SBIR, Small Business Innovation Research project that was funded by NSF in the 1980s.

So you can clearly see that there are a lot of examples to be seen where we can actually have a significant return on investment, not only in terms of the trained talent, but also in terms of the companies that get spun out, and entrepreneurial ventures that get spun out, which makes possible regional innovation ecosystems of significant vibrancy.

Now, when you talk about the ramp up, I was just mentioning earlier that if you look at the existing projects that are at NSF that should be funded that are not being funded, and these are ideas that we are leaving behind, that I fear that our competitors are going to take advantage of those ideas by their investments, and move that forward. That would not be a good thing for us as a Nation.

So we need to make sure that every bit of ideas that have been reviewed and shown to be worthy of investment need to be invested in, because our Nation cannot let those ideas not be nurtured right here and developed right here, and then the translation happening right here in our Nation. Right there, Senator, we are talking about a doubling of the budget.

$50 BILLION FOR TIP

Senator BRAUN. I have got one follow-up question, because my time is running short. On the $50 billion figure, was that your suggestion or the administration's, in terms of the amount?

Dr. PANCHANATHAN. So I put forth a vision, basically, in terms of what we can do. I talked about the concept of what we can do. I have been talking about it since I joined NSF, I laid out the vision for NSF, where I talked about how we can take all the fantastic science and technology activities that NSF has been doing, and how we might leverage this by a cross-cut thinking of technology as part of that.

So the vision and the ideas are something that I have been talking about for several months now, since I got here. And that is, Senator, based on my experience in Arizona, in my previous role I have seen firsthand, how when you take research, technology development, economic development, partnership with industry, and bringing the regional economic development activities together, you can really make a region prosper, and it attracts new companies.

So I know that this can be done nationally, and this is the time for us to do that. You refer to our competition, this is the time for us to do that at speed and scale across our Nation. So it can be done. And so the concept is something that I have been talking about.

Senator BRAUN. Thank you.

Senator SHAHEEN. Thank you, Senator Braun.

Senator Hagerty, I understand that you would like a second round. So let me go to you.

SUPERCOMPUTING

Senator HAGERTY. It might help if I turn this on. Thank you, Madam Chair. I appreciate that.

I just want to follow up on the questions that Senator Van Hollen asked, particularly focused on supercomputing, quantum computing. And I think the Senator from Maryland made a great point, that this is an area of great competition that we are in right now, and the United States' share of research dollars is declining, even though our absolute expenditures are going up. It is because China is investing so heavily in these areas.

And if that investment continues, if they achieve the breakthrough that they are looking for, they may be in a position to, by brute force, break our encryption technology. That is not a place that we ever want to be.

I would like, if I might, turn to my home State of Tennessee. There, as you well know, Oak Ridge National Lab is a gem of the United States, and we run the Summit supercomputer. It is our country's fastest supercomputer to date. And later year we are going to introduce an exascale computer. Again, supercomputing is a great strength of ours there in Tennessee, at Oak Ridge National Lab. I understand also that the National Science Foundation has supercomputing capacity.

Back to the original theme, I want to encourage you, Director, to make certain that we are coordinating as best as we possibly can because as we put billions of dollars to work, billions of American tax dollars to work, as Senator Braun rightly mentioned, are scarce and precious even more now than ever before. We need to make sure that we get the most of that investment, and it is going to require a great deal of coordination.

Dr. PANCHANATHAN. Thank you, Senator. I will tell you two things in quick response. I am all about partnerships. I mentioned that to you.

Senator HAGERTY. Yes.

Dr. PANCHANATHAN. When the COVID hit, the pandemic hit, we quickly constituted what we call the high-performance computing consortium. This was partnership between Department of Energy, NSF, and companies like IBM coming together and saying: how might we provide the high-performance computing cycles that are necessary to combat this pandemic by the models that we need to look at, and understand how the virus behaves, and how we might combat the pandemic through the thinking.

So we are working very closely with the Department of Energy, not only in the high-performance computing realm, but in quantum and other emerging areas.

And I will leave with the second thought. Last week I had my first conversation with Secretary Granholm. I reached out and I said: Secretary, I would like to have a conversation with you. And she was kind enough to give me the time. And I said: how might we work together, Secretary? We might be partnering with each

other because, you know, Department of Energy and NSF can do even greater things as we move things forward.

So you can count on my DNA of partnership that I have to see how I can reach out and talk to every agency out there to see how we might work together. Because as a nation we need that——

Senator HAGERTY. I agree.

Dr. PANCHANATHAN [continuing]. To move us forward at speed and scale now.

Senator HAGERTY. Yes. Well, I applaud that effort. Thank you.

And Madam Chair, thank you very much for the additional time.

Senator SHAHEEN. Sure. Senator Manchin, if you are ready, we can take you right now.

Senator MANCHIN. I am more than ready.

Senator SHAHEEN. You can sit wherever you want.

Senator MANCHIN. Thank you so much. Thank you. Thank you very much, Senator.

Doctor, it is so good to have you here. Thank you very much. Okay?

Dr. PANCHANATHAN. Okay.

PARTNERSHIP WITH DOE

Senator MANCHIN. Last year the Energy Committee worked in a bipartisan manner to assemble and pass the Energy Act, as you recall, proving the commitment that my colleagues and I shared advancing innovation across many technology areas, that law and several others focus on the Department of Energy and the National Labs, leadership role in research development and commercialization of several energy technologies, as well as advances in computing, manufacturing, and so many other areas.

And I understand the roles that National Science Foundation, and the Department of Energy, and National Laboratories play in the broader innovation landscape. And I support the mission of each organization. I want to focus my question on the relationship between the DOE and the NSF with regards to research and development.

So I think I can ask, Doctor, if you agree that the Department of Energy and National Labs play a critical, a very critical role in the technology research development, commercialization and the fields mentioned in the Endless Frontier Act?

Dr. PANCHANATHAN. Senator, just before you walked in, I was just talking about the strong partnership that we have the Department of Energy in the areas of quantum, in the high-performance computing area, Senator, we partnered with them in ensuring that high-performance cycles were available between our two high-performance computing infrastructure that we have, so that we might combat the pandemic fairly and squarely.

We partnered with energy in the area of AI. We partnered with energy in a lot of other projects and most importantly facilities, the fantastic facilities that we have, you know. And whether it is the facility in Switzerland, or whether it is the facility in Chile, we partnered with DOE and we look forward to strengthening those partnerships. So this is something that I am very, very keen to do.

Senator MANCHIN. Yes.

Dr. PANCHANATHAN. I was just saying that I spoke to Senator Granholm last week.

Senator MANCHIN. Yes.

Dr. PANCHANATHAN. And I reached out to Senator Granholm and said, I would very much like to talk to you about how we might strengthen this partnership even more.

Senator MANCHIN. Right.

Dr. PANCHANATHAN. She and I are absolutely committed to seeing how we might work together, you know, much more——

Senator MANCHIN. What we are trying to prevent from happening is reinventing the wheel.

And Madam Chairman, if you will, allow me?

Senator SHAHEEN. Yes.

PREVENTING DUPLICATION IN RESEARCH AND FUNDING

Senator MANCHIN. The DOE has already got the National Labs all over the country, as you know, the amount of money that they were trying to move around now, and maybe investing again. Are we trying to reinvent the wheel where we are paying double for what we already have already done?

So in doing that you have a hundred million—it was a $100 million I think was going to be invested for us to be able to compete at the levels we need to compete globally and be—still be a global leader.

Do you believe that money should go to the National Labs, or part of that money? Or do you think all of it should come to NSF?

Dr. PANCHANATHAN. Senator that is up to Congress to decide what is the right thing to do. I can only tell you from the point of view of NSF. There are unbelievable technologies at NSF. It is not only about energy technologies, clearly in energy technologies we need to partner with Department of Energy Labs, and others. But when we talk about NSF, NSF pilots all technologies, broad spectrum of technologies. And so whether it is, you know, the GEO directorate, or BIO directorate, or computing directorate, or engineering directorate, whatever the directorate might be, there are many, many technologies that are emerging from NSF.

COMMERCIALIZATION OF TECHNOLOGIES

Senator MANCHIN. Are you able to commercialize these technologies?

Dr. PANCHANATHAN. Yes.

Senator MANCHIN. Do you have the experience of commercializing them, such as the labs?

Dr. PANCHANATHAN. So that is the infrastructure that we already have, Senator. In terms of, if you look at our I-Corps program, our own SBIR/STTR program, and the proposals that we have in terms of the innovation centers and accelerators that we think are necessary to be built as a public-private partnership.

And that partnership, Senator, can also include other agencies. No question about that. I think I look at this as: this is a time where all technologies that need to be brought rapidly to market is exceedingly important for us to compete against our competitors, like China. We need to unify ourselves and see how we can do this faster.

WEST VIRGINIA LABS

Senator MANCHIN. And we would like, in West Virginia, you know, we do a lot of the heavy lifting, and it is something we are proud of. We would like to invite you to make sure that you come to our Green Bank Observatory. Have you been to that? I do not think——

Dr. PANCHANATHAN. I have not yet, Senator.

Senator MANCHIN. Please come.

Dr. PANCHANATHAN. But I would most certainly welcome the opportunity——

Senator MANCHIN. We are inviting you with our open arms to come and visit.

Dr. PANCHANATHAN. Yes.

Senator MANCHIN. Because I think it would be exciting for you.

Dr. PANCHANATHAN. Accepted.

Senator MANCHIN. And also, maybe in Morgantown to see our lab, our NET Lab, National Energy Technology Lab——

Dr. PANCHANATHAN. Yes.

Senator MANCHIN [continuing]. Which has done so much in the areas of energy production for our country, at maximum efficiencies. Also Marshall University's Robert C. Byrd Institute (RCBI), the Apprentice workshops and you all work I think with that.

Dr. PANCHANATHAN. Yes.

Senator MANCHIN. And you all do a lot——

Dr. PANCHANATHAN. Yes.

Senator MANCHIN [continuing]. With the Apprentice workshops, which has been very, very instrumental and done a great job. So we look forward to working with you. I appreciate the hard work. I hope that we can work together, myself on energy, and basically with the NSF, and also through our labs, so that we don't have a redundancy or a competition. We take what each one does and expertise you have, and make sure that we build off of that so we get the best return.

Dr. PANCHANATHAN. Yes.

PARTNERSHIPS

Senator MANCHIN. And then sharing information back and forth.

Dr. PANCHANATHAN. Senator, I would agree with you. I think as a Nation, we need to advance all science, technology aspirations. More importantly, Senator, you brought up something that is very important and dear to my heart is: how do we get talent everywhere energized? In the great State of West Virginia, for example, there are talents and there are pathways.

Senator MANCHIN. Yes.

Dr. PANCHANATHAN. Some talent may go through a 4-year university, some may go through a research university, some may go through a community college, some may go through after a K through 12 with a vocational training. All STEM talent needs to be inspired, motivated, nurtured, that is where I think NSF shines.

The NSF programs ensure us that we not only take care of how do we get the best science teachers inspiring the K through 12 talent, best K through 12 programs, understanding how people learn

so we can develop better outcomes through learning, and then ensuring that all pathways are energized.

So this is something that I believe is very important for us, the talent part, for all parts of our Nation, including West Virginia.

Senator MANCHIN. Yes.

Dr. PANCHANATHAN. And I look forward to the opportunity of being with you in the Green Bank Observatory.

I know my time is short, but I will tell you I have personal attachment to that. My father was a radio astronomer, so I know how important the radio astronomy facilities are, and so——

Senator MANCHIN. I will have my staff reach out. We will set up an appointment. And I will just meet you there, or we will take you there, whatever. And I think it will be extremely interesting. It is called the Quiet Zone.

Dr. PANCHANATHAN. Yes, Quiet Zone, yes. We value that immensely. Thank you so much.

Senator MANCHIN. I look forward to working with you. Thanks so much.

Dr. PANCHANATHAN. Likewise, I look forward to working with you, too.

STEM EDUCATION

Senator SHAHEEN. Thank you, Senator Manchin.

And I am glad you came back to that topic, Director, because I have another round, and it is about exactly that.

I talked in my opening statement about the importance of STEM education. You talked in your testimony about the importance of inclusivity, and how do we bring more people in to have the STEM backgrounds that they need so that they can do the research and the innovation that the country needs.

The 2022 budget request has an additional $100 million to help address this. Can you talk a little more, with specificity, about how you see using that hundred million, and how you envision reaching out to make STEM opportunities more inclusive for people?

Dr. PANCHANATHAN. Senator, as you know, additional details on specific things will come out when the President's budget request formally comes out, and we will have all of the details. But I can speak to the principles of what we are doing right now and——

Senator SHAHEEN. Yes. Well, speak to your vision for how you see——

Dr. PANCHANATHAN. Yes. Yes.

Senator SHAHEEN [continuing]. Being more diverse and inclusive, and how we—how we get those folks into what we are trying to do?

Dr. PANCHANATHAN. Senator, thank you. As I said, I am very, very passionate about talent everywhere being energized, and particularly in our MSIs, HBCUs, HSIs, and Tribal Colleges and Universities, TCUPs, and our community colleges. We need to make sure that talent is everywhere, and that the talent has the opportunity, therefore, to be nurtured right where the talent is. To give opportunities that they don't have to, therefore, go to some other place. They may do so by choosing to do that, but not because they have no other choice where they are.

And so we are ensuring that they are listening to HBCUs, asking them and so, pretending that we know the answer to everything,

NSF is really good at convening through workshops, and seminars, and through advisory committees, and constantly listening to people. How can we do even more, better? How can we do this at a larger scale?

So we have a number of pilot programs. Let us take HBCUs, for example, the HBCU STEM Undergraduate program is a very successful program. And that program, for example, consults with the 50 HBCUs to see how we can energize the undergraduate talent to think about going for post-graduate, as well as industry jobs, and other career opportunities.

So we are going to be working through our various pilot programs, right now I call them pilots, some of them are pilots, and how do we scale them. So when we talk about new investments, it is really for scaling these ideas. And by listening to the community we can shape these programs, so they achieve the success that we desire. So there are so many ideas that are out there, and talent that is out there, but we need resources to be able to scale them fast.

And that is why I am very enthusiastic. I repeat this again, very enthusiastic about the fiscal year 2022 budget, very enthusiastic about the American Jobs Plan, very enthusiastic about the spirit of EFA, because these things make possible because this is the time for us to do that.

And I can assure you, and I can, in fact, give you the details offline in order to make sure that you have a complete coverage of all the things that we have going on right now at NSF in terms of what we call the Education and Human Resources Directorate, pioneering programs, but also working in partnership with our other directorates to ensure that talent, wherever it is, has a chance to be successful, and that there are no barriers to that success.

[The information follows:]

NSF is committed to increasing participation in the STEM enterprise, especially by groups that have historically been underserved and underrepresented in STEM fields. The NSF program portfolio reflects an ongoing effort to expand opportunities for participation.

Minority serving institutions (MSIs) serve an important role in educating students from groups historically underrepresented in STEM. Several programs are of particular importance for building research capacity and enhancing STEM education at MSIs:

—The Centers for Research Excellence in Science and Technology (CREST) program provides support to enhance the research capabilities of MSIs by the establishment of centers that effectively integrate education and research. As part of the CREST program HBCU Research Infrastructure for Science and Engineering (HBCU–RISE) track supports the expansion of institutional research capacity as well as the production of doctoral students, especially those from groups underrepresented in STEM, at HBCUs.

—The Historically Black Colleges and Universities Undergraduate Program (HBCU–UP) provides funding to strengthen STEM undergraduate education and research at HBCUs.

—The HBCU Excellence in Research (HBCU EiR) program, managed through the Office of Integrative Activities, provides opportunities for HBCUs, particularly for those that have not been successful in larger NSF R&RA competitions, in order to stimulate sustainable improvement in their research and development capacity.

—The Improving Undergraduate STEM Education Hispanic-Serving Institutions (HSI) program is directed toward enhancing the quality of undergraduate STEM education and to increase the recruitment, retention, and graduation rates of students pursuing degrees in STEM at the Nation's HSIs.

—The Tribal Colleges and Universities (TCUP) program provides support to Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high quality STEM education and research.

Other efforts increase the participation of groups historically underrepresented in STEM include programs:

—This Louis Stokes Alliances for Minority Participation (LSAMP) directed toward removing barriers for participation of underrepresented students in the STEM education enterprise,

—Alliances for Graduate Education and the Professoriate (AGEP) focused on increasing the number of historically underrepresented minority faculty in STEM by building and sharing successful models,

—Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE) catalyzing institutional change to enhance the systemic factors that support equity and inclusion and to mitigate the systemic factors that create inequities in the academic profession and workplaces, and

—Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES) building collaborative infrastructure to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the population of the Nation.

In additional to NSF's longstanding programs NSF some examples of new initiatives are:

—Within SBE, a new program was initiated in fiscal year 2020, Build and Broaden (B2), which fosters research collaborations between scholars at MSIs and scholars in other institutions or organizations.

—New in fiscal year 2021, the CISE–MSI Research Expansion Program, will broaden participation by increasing the number of CISE-funded research projects from MSIs.

—The Directorate of Education and Human Resources released a new Program Description, "Racial Equity in STEM Education," that seeks proposals that would advance racial equity in STEM education and workforce development through research and practice.

And so this is something that you will find in my vision. You alluded to my vision. My vision is to ensure there are no barriers to success, there are no barriers to scaling and that people who have the talent are able to exercise that.

Senator SHAHEEN. Well, thank you very much. I agree. It is a very exciting time, and that the Jobs Plan, and the other initiatives that have been offered provide very exciting opportunities. But we have to make sure that they work in the way that we envision, and that we are getting the best bang for the buck out of the dollars that we spend.

So I look forward to working with you on that. I know the subcommittee looks forward to working with you on that.

ADDITIONAL COMMITTEE QUESTIONS

At this point I don't think we have any more people waiting, virtually. So I will close the hearing. If there are any questions for the record, we will submit those. And we hope that NSF can respond to any questions within 30 days.

So, again, thank you very much, Director. It is exciting. I really appreciate your being our kickoff hearing of the year, and look forward to what will be accomplished at NSF.

Dr. PANCHANATHAN. Thank you, Chair Shaheen, and the subcommittee Members.

Senator SHAHEEN. Thank you.

[The following questions were not asked at the hearing, but were submitted to the National Science Foundation for response subsequent to the hearing.]

QUESTIONS SUBMITTED TO DR. SETHURAMAN PANCHANATHAN, DIRECTOR

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

A REVIEW OF THE PRESIDENT'S FISCAL YEAR 2022 FUNDING REQUEST FOR THE NATIONAL SCIENCE FOUNDATION AND SECURING U.S. COMPETITIVENESS

NEW NSF DIRECTORATE

Question 1a. The fiscal year 2022 budget outline proposes a new National Science Foundation directorate focused on technology development. This idea is similar to the bipartisan Endless Frontier Act that creates a new NSF Technology Directorate focused on 10 priority topics. These priority topics include artificial intelligence, quantum computing, robotics and clean energy.

How would the creation of a Technology Directorate, either through the Endless Frontier Act or as proposed in the President's budget outline, benefit the National Science Foundation?

Answer. Intense global competition and a rapidly-changing technological landscape requires the United States to take a different approach to research and development investment that brings science and technology innovations to market much more rapidly. Doing so requires unleashing the potential of economies of innovation across the Nation and tightly integrating curiosity-driven and use-inspired research to address societal challenges. The scientific pursuit of knowledge and understanding cannot be separated from the development of new technological capabilities. And, in turn, those new capabilities allow us to pursue new research questions that were either unseen or out of reach.

The creation of a new directorate will allow the agency to continue to support innovation across all disciplines of science and engineering, at the speed that is required in today's rapidly changing landscape, and to harness the profound technological opportunities to produce another seven decades of transformational innovations for the country.

The new directorate will work with programs across NSF and with other Federal and non-Federal entities to expedite technology development in emerging areas that are crucial for the United States' technological leadership, including artificial intelligence, high performance computing, disaster response and resilience, quantum information systems, robotics, advanced communications technologies, biotechnology, cybersecurity, and materials science.

Question 1b. Obviously multiple departments and agencies fund research into Artificial Intelligence, quantum and other topics within the priority list, including the Department of Defense, the Department of Energy's Office of Science and the National Institute of Standards and Technology. How would NSF work with these other agencies and how do the agencies all fit together in the innovation pipeline?

Answer. NSF is the Nation's leader in supporting fundamental research in all areas of science and engineering, including AI, advanced manufacturing, advanced wireless, biotechnology, microelectronics and semiconductors, and quantum information science (QIS). NSF has a long history of collaborating with other Federal agencies through various avenues. For example:

—The NSF Director co-chairs the National Science and Technology Council's (NSTC) Select Committee on AI, which advises the White House on interagency AI R&D priorities and establishes structures to improve government planning and coordination. NSF leadership also co-chairs the NSTC Machine Learning and Artificial Intelligence Subcommittee as well as the NSTC Future Advanced Computing Ecosystem Subcommittee.

—NSF leadership co-chairs the Federal Government's Networking and Information Technology Research and Development (NITRD) Subcommittee of the NSTC, which coordinates investments in networking and information technology research and development across more than 20 Federal departments, agencies, and offices.

—NSF leadership co-chairs the NSTC Subcommittee on Quantum Information Science, ensuring coordination in our Nation's QIS investments.

NSF also has a proven track record of partnering with other Federal agencies to support research in areas of shared interest. Some examples of this include the Cyber-Physical Systems, National AI Research Institutes, National Robotics Initiative, and Smart and Connected Health programs. For example, in fiscal year 2020, the U.S. Department of Agriculture National Institute of Food and Agriculture wholly funded two AI Institutes. In general, NSF partners with other agencies to pursue use-inspired innovations that advance fundamental research and accelerate transition to practice while addressing other agencies' mission spaces.

Question 1c. How does NSF balance investing in known priority fields that still have significant questions outstanding, like quantum computing, versus exploratory research that helps determine these future fields?

Answer. NSF ardently believes in and supports the full spectrum of research from foundational to use-inspired. Innovations in foundational research drive use-inspired advances, and use-inspired advances in turn serve to motivate additional foundational work. This iterative process has been at the heart of the NSF-funded innovations that have, over many decades, paid dividends on taxpayers' investments. NSF views growing support for all aspects of fundamental research and workforce development as the key to shaping emerging technologies and driving the industries of tomorrow.

Question 1d. I have heard concerns that the proposal to create a new Technology Directorate will move NSF away from its basic research mission. Can you reaffirm NSF's commitment to basic research and also explain your vision for how the existing structure of the agency would be protected?

Answer. NSF is fully committed to its founding mission to advance fundamental research in all areas of science and engineering. While NSF is also committed to the creation of a directorate for technology, innovation, and partnerships, this new directorate could not exist without the rest of NSF continuing to produce the groundbreaking results it always has. These results will pave the way for new technologies and innovations that this directorate can in turn further advance and transition to practice. Thus, NSF must continue to support the full spectrum of research—from foundational to use-inspired to translational—to ensure that the results of NSF's investments are fully realized, giving rise to new technologies and positive impacts on individuals' lives, the Nation's economy, and global competitiveness.

NSF has been investing in foundational research and use-inspired outcomes for decades. At a time of intense global competition, NSF is prepared to lead the Nation in equal parts discovery and innovation, along with STEM education, to help build a diverse and inclusive workforce and unleash economic and societal progress. NSF is well positioned to identify emerging opportunities and innovate to create future opportunities to unlock their potential for the American people. Every day, we benefit directly from NSF-funded advances, from the technology that powers our smartphones and the capabilities that connect them, to improved weather forecasts, to a better understanding of the world around us. These are the sorts of groundbreaking advances that we expect through the formation of collaborations between the new directorate and existing NSF directorates.

Question 1e. How do we ensure that the new program reaches all geographic areas? Innovation should not be limited to a few standout regions. I want to make sure that the benefits of innovation are broadly shared. Will EPSCoR States be prioritized in this new Technology Directorate?

Answer. NSF is committed to harnessing the talent for innovation that exists throughout the U.S. Any individual, regardless of geographic or demographic background, might be inspired to pursue a career in STEM research and innovation—and the participation of people with different backgrounds strengthens the research enterprise by bringing varied perspectives to the table. For example, NSF-funded research has demonstrated the power of diverse perspectives in advancing use-inspired research for equitable AI systems.

Given this context, NSF envisions that the new directorate would support the creation and development of novel local and regional innovation ecosystems, throughout the U.S., capable of addressing local-level challenges, ranging from food and agriculture to transportation to healthcare delivery to equitable access to education. These regional innovation accelerators would result in new products and services contributing to economic growth and new jobs in every corner of the country—presenting opportunities for every American.

NSF operates through merit review; therefore, funding flows to meritorious projects wherever they are located. In addition, NSF works diligently to develop the research capacity of every EPSCoR jurisdiction so that the Nation can leverage its full research potential. The EPSCoR program's outreach mechanisms enable NSF staff to directly engage and inform the EPSCoR research community about NSF opportunities, priorities, programs, and policies. We anticipate that staff from the new directorate will participate in such EPSCoR-focused outreach. Through these efforts, EPSCoR jurisdictions' abilities to submit competitive proposals for varying projects sizes and scopes will be strengthened.

NSF's fiscal year 2022 budget request to Congress includes more details about planned activities and investments through the new directorate.

COVID–19 PANDEMIC

Question 2a. The pandemic has profoundly affected all our lives, and the scientific and research enterprise is no exception. The pandemic has stretched resources and limited in-person interaction, which has required putting projects on hold or even shutting down experiments. Yet, the scientific community has responded in ways that many only dreamt were possible—most notably developing not one, but multiple novel vaccines in less than a year. We owe the scientific community a great debt of gratitude.

How has the pandemic affected the scientific community as well as the NSF directly?

Answer. As it relates to NSF directly, the pandemic has certainly had a significant effect on NSF's staff, both in how NSF conducts business and through the burdens staff need to manage in their personal lives. However, NSF has mitigated these challenges and continues to effectively achieve the agency's mission.

Examples of actions NSF has taken to successfully meet its mission during the pandemic:

—Ensured all NSF staff were telework-ready and had telework agreements in place at the start of the pandemic to allow for a maximum virtual posture.
—Prior to the pandemic, invested significantly in laptops and mobile devices as well as remote access tools, allowing staff to work seamlessly in any location.
—Expedited the rollout of the Zoom technology to facilitate remote work by providing an agency-wide virtual collaboration platform. Zoom has been effective and well-received by NSF staff and stakeholders since the start of the pandemic.
—Created new business processes appropriate in a virtual environment, such as employee onboarding and offboarding as well as virtual information technology help for teleworking staff.
—Provided workforce flexibilities, including weather and safety leave, to help employees deal with personal responsibilities such as the closure of schools, dependent care and senior care.

As it related to the scientific community, early reports released in 2020 suggested that the pandemic had a tremendous impact. Student and faculty researchers had to abruptly cease work, which resulted in lost data, samples, and years of work causing disruptions to career trajectories for early career scientists. NSF's major facilities were also affected. Some had to curtail operations and shut down equipment that is costly to restart and some are still operating at a limited capacity. Some academic institutions instituted layoffs or paused hiring to offset reductions in available financial resources, and some of the gains made in broadening participation may be shrinking. In addition, NSF has gathered qualitative information about the impacts of the COVID–19 pandemic on STEM communities through listening sessions and formal presentations from the Association of Public and Land-Grant Universities, Association of American Universities, meetings with University Vice Presidents of Research, NSF Advisory Committees, the Committee on Equal Opportunity in Science and Engineering, the National Science Board, and the 20-year celebration of NSF's ADVANCE program. These anecdotal reports emphasized the potential for impact at transition points early in academic career pathways (undergraduate to graduate student, graduate student to post-doc, post-doc to new faculty member). They also emphasized challenges experienced by academic researchers (students, post-docs, faculty members, and technicians) who had young families, because of extended school closures. For women, this information is supported by the findings of the National Academies' report, *The Impact of COVID–19 on the Careers of Women*

in Academic Science,[1] *Engineering, and Medicine.* This report, sponsored in part by NSF, summarized additional evidence about the impacts of the COVID–19 on women.

NSF acted quickly in response to the pandemic and used $75 million in CARES Act funding together with funds from its regular appropriation to fund over 900 Rapid Response Research (RAPID) and EAGER awards. The awards were to model and understand the spread of COVID, inform and educate about transmission and prevention, and develop processes and actions to address the global challenge. This funding energized the research community, while other initiatives were put into place to provide support at all levels to mitigate losses and catalyze the recovery of research, maintain the STEM talent pipeline, and ensure that NSF had staffing to implement necessary recovery mechanisms.

NSF's fiscal year 2021 Current Plan, American Rescue Plan, and fiscal year 2022 request support funding for COVID recovery, including support for individuals and institutions disproportionately affected by the impacts of the pandemic. For example, in the Directorate for Education and Human Resources, home to programs focusing on HBCUs, Tribal Colleges, and Hispanic Serving Institutions, funding is available to support postdoctoral scholars, community colleges, and research focused on racial equity. Funding opportunities for post-docs and other new investigators have been created or augmented in several other research domains such as computer science, ocean science, polar science, mathematical and physical sciences, and engineering.

Faculty members with young families were one of the groups whose work was adversely affected by the pandemic. In response, NSF issued a *Dear Colleague Letter*[2] that expanded the availability of support for Career Life Balance supplements to all research personnel on any research grant. In addition, during the course of the pandemic, *proposal deadlines*[3] for over 30 funding opportunities were delayed to provide potential principal investigators with additional time to prepare proposals.

As NSF continues to monitor the situation among our varied communities, we stand ready to respond to ongoing COVID–19 related impacts by using funding from the fiscal year 2022 Request to increase investments in STEM education, EPSCoR states, community colleges, and MSIs, using established programs across the Foundation. Additionally, funding within the fiscal year 2022 Request serves to:

—Expand research on the biology, ecology, and evolution of infectious diseases through investment in projects that advance understanding of the origins of emerging infectious diseases and their transmission, and the biotechnologies needed for detection and intervention;
—Initiate new funding opportunities to support development of predictive intelligence for pandemic prevention by leveraging convergent approaches across scientific disciplines; and
—Increase understanding of social factors for pandemic prevention through investment in foundational research in social, behavioral, and economic impacts of pandemics, including improved public understanding, international collaborations to hasten recovery, and research that improves operations and logistics of pandemic-related supply networks and vaccine distribution.

Question 2b. The pandemic also caused delays in the STEM pipeline for those researchers where their graduate and postdocs were interrupted, or those that had to pause their work to take care of loved ones during the pandemic. Through the American Rescue Plan, Congress provided $600 million through NSF to support researchers. The agency is also setting aside some additional money within the regular fiscal year 2021 appropriation. Could you explain what NSF is doing to help the scientific community respond to the pandemic, including ensuring we do not lose this talent?

Answer. ARP funding is complemented by over $350 million prioritized for COVID-related impacts in the fiscal year 2021 Current Plan. The Nation's research communities have been hard hit by COVID with research plans jeopardized and training for the next generation of STEM leaders put in limbo.

Through listening sessions and community outreach we know that the need for support exceeds the $950 million in total that NSF will invest in fiscal year 2021. The STEM communities, particularly those institutions and individuals disproportionately affected, require NSF's focused support in order to regain their momentum and to lessen the long-term effects of COVID on their research and education plans.

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[1] www.nap.edu/resource/26061/ReportHighlights__WomenCOVID–19__FINAL.pdf
[2] www.nsf.gov/pubs/2021/nsf21021/nsf21021.jsp
[3] www.nsf.gov/bfa/dias/policy/covid19/covid19__deadlines.pdf

This will allow the Nation's basic research community to emerge from the epidemic intact and move forward. Examples of how this funding is being deployed include supplements to existing research awards and dissertation grants; added support for long-standing workforce programs such as NSF Research Traineeships; expanded opportunities for fellowships; and support for early to mid-career transitions such as those funded through the CAREER program.

NSF will continue this focused effort in fiscal year 2022. As noted above, NSF continues to monitor the situation among our varied communities, we stand ready to respond to ongoing COVID–19 related impacts by using funding from the fiscal year 2022 request to increase investments in STEM education, EPSCoR States, community colleges, and MSIs, using established programs across the Foundation. Additionally, funding within the fiscal year 2022 request serves to:

—Expand research on the biology, ecology, and evolution of infectious diseases through investment in projects that advance understanding of the origins of emerging infectious diseases and their transmission, and the biotechnologies needed for detection and intervention;
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—Increase understanding of social factors for pandemic prevention through investment in foundational research in social, behavioral, and economic impacts of pandemics, including improved public understanding, international collaborations to hasten recovery, and research that improves operations and logistics of pandemic-related supply networks and vaccine distribution.

Question 2c. Studies have shown that the pandemic has disproportionately affected women scientists, particularly those with young children. One survey published in the scientific journal Nature Human Behavior found that scientists with at least one child 5 years old or younger experienced a 17 percent larger decline in research time than scientists without children. How does NSF plan to support scientists, many who are early in their careers, who have been significantly impacted by the COVID–19 pandemic?

Answer. Thank you for drawing attention to the Nature Human Behavior study, *Unequal effects of the COVID–19 pandemic on scientists,* which was in part supported by NSF. Subsequently, the National Academies released, *The Impact of COVID–19 on the Careers of Women in Academic Science, Engineering, and Medicine.*[4] This report includes additional information about the disproportionate impacts of the pandemic on women scientists.

Soon after the pandemic began, NSF took several important steps. First, we called for RAPID research proposals to not only understand the spread of COVID–19 but to study its effects. NSF has funded RAPID research awards on topics such as supporting remote work using technology, documenting the effects on family life, studying inequities in how different households have been affected, and building resilience to stress during the pandemic. Looking across the scientific and education communities, NSF has supported RAPIDs relating to higher education faculty and K–12 teachers, and students ranging from graduate school to undergraduate to community college to K–12. Many of these RAPID projects are still under way, but we expect to learn from these projects and build preparation and resilience for the Nation.

At NSF we know that the pandemic affected the researchers, and the students, we support. We also know that health, safety, and family are priorities above all. As the pandemic began, we were flexible with proposal submission dates. We have allowed flexibility in spending and budgeting as plans changed during the pandemic. When possible, we have been able to make supplements to awards, to keep projects going and responding to requirement changes. These actions could not eliminate the effects of the pandemic on the scientific and educational communities, but they have given individuals some more control over the timing of their projects and in some cases bring in additional support. These efforts are intended to help our communities succeed.

In a recently updated Dear Colleague Letter (DCL) NSF 21–021,[5] NSF offered Career-Life Balance support to those who are confronted with a short-term increase in dependent care responsibilities, to ensure that the research activities supported by an NSF award can continue. These additional funds are available to support work by scientific faculty and project staff, postdoctoral scholars, and graduate stu-

[4] www.nap.edu/resource/26061/ReportHighlights__WomenCOVID–19__FINAL.pdf
[5] www.nsf.gov/pubs/2021/nsf21021/nsf21021.jsp

dents. This support will not eliminate the effects of the pandemic but should help to mitigate some of the most severe inequities.

NSF supports the advancement of women in their academic careers through several programs. One example is the NSF ADVANCE: Organizational Change for Gender Equity in STEM Academic Progressions program (NSF 20–554).[6] NSF ADVANCE emphasizes that individuals cannot be defined by a single identity or factor (e.g., gender), and projects now focus on multi-factors or identities (e.g., gender, race/ethnicity, et.al.) or intersectionality, as they address systemic change and gender equity work in academic environments.

In addition, NSF has a suite of programs that support postdoctoral scholars in several disciplines, including Astronomy and Astrophysics (*NSF 18–574*),[7] Biology (*NSF 20–602*),[8] Geosciences (*NSF 18–565*),[9] and Mathematical and Physical Sciences (*20–573*).[10] Additionally, in response to COVID–19 the Directorate for Education and Human Resources released a DCL (*21–066*)[11] for supplemental support for STEM education postdoctoral researcher affected by the pandemic.

As we emerge from the pandemic with hope, across all of NSF is looking for additional ways to strengthen our support of early career faculty and those who are at vulnerable career stages and have been disproportionately affected by the pandemic. I can assure you that this is at the highest level of priority for NSF.

Question 2d. Could you discuss any additional needs that the agency lacks the resources to cover, especially any delays to construction of major NSF facilities due to COVID–19?

Answer. NSF has carefully monitored the impacts of COVID–19 on the progress of its major facilities under construction. There are delays and consequent cost increases to all facilities under construction because of travel restrictions, social distancing and quarantines, and supply-chain issues. NSF has described the specific impacts on both facilities under construction and those in operations in periodic reports (recently transitioned from biweekly to monthly) that have been submitted to congressional staff. A copy of the most recent report is attached.

Near-term cost increases to major facilities under construction have been covered by reprogramming funds between projects within the Major Research Equipment and Facilities Construction (MREFC) account and by funds made available through the American Rescue Plan Act (ARP). Cost increases in fiscal year 2022 are reflected in the NSF budget requests, and future budgets will reflect the results of additional analysis on cost impacts to major facilities.

NSF identified additional materials and activities required to allow for uninterrupted operations during the pandemic. NSF was provided funds in fiscal year 2020 via the CARES Act and ARP in fiscal year 2021. NSF's pandemic-related needs for operations were covered by these two Acts.

ATTACHMENT 1

NSF MAJOR FACILITY COVID–19 STATUS—MAY 5, 2021

Entries with significant changes in the past few weeks are bracketed with bold brackets (ex: **[ ]**).

OPERATIONS STAGE FACILITIES

BIO

—*National Ecological Observatory Network:* **[**As of May 3, 2021, 16 of 18 Domain Support Facilities (DSFs) and 71 of 81 field sites were in full operation, with two DSFs (covering three domains) and nine field sites in limited operation. One field site remains closed. The DSF and five field sites in the mid-Atlantic region went from open to limited operation and back to open during the month of April. Limited operation of Airborne Observation Platforms resumed at the end of March 2021, under strict COVID–19 safety precautions.**]**

ENG

—*Natural Hazards Engineering Research Infrastructure (NHERI):* NHERI is a mix of (1) staff continuing to work remotely and (2) operations by the experi-

[6] www.nsf.gov/pubs/2020/nsf20554/nsf20554.htm
[7] www.nsf.gov/funding/pgm_summ.jsp?pims_id=5291
[8] www.nsf.gov/funding/pgm_summ.jsp?pims_id=503622
[9] www.nsf.gov/funding/pgm_summ.jsp?pims_id=503144
[10] www.nsf.gov/funding/pgm_summ.jsp?pims_id=505879
[11] www.nsf.gov/pubs/2021/nsf21066/nsf21066.jsp

mental and field labs with restricted staff/user access and institutional EH&S/ COVID–19 restrictions. User workshops are being conducted online. Shake table upgrade work at UCSD is proceeding under social distancing; delay in completion to about October 2021 is anticipated due to COVID–19 and hardware issues.

GEO

—*Academic Research Fleet:* Operations continue under COVID–19 protocols. [Seventeen of the 18 vessels have been in operation in the last month.]

—*Antarctic logistics:* Access to McMurdo Station and South Pole Station has closed for the season; both are in winter status. "Air bridge" cargo flights to McMurdo concluded before the closure. [The Palmer Station winter-over crew sailed from Chile on May 1, 2021, with a crew exchange planned to conclude this month.] Industry Day for the recompetition of the Antarctic Support Contract was held on February 16, 2021.

—*Geodetic facility for Advancement of Geosciences (GAGE):* Data flowing, most staff teleworking. Summer internships are currently being planned as a mix of virtual and in person.

—*IceCube:* Two winter-over IceCube technicians are in place at South Pole. Operations continue. Computing infrastructure is supported at Wisconsin, with some in-person work resumed. The upgrade project is in hiatus.

—*International Ocean Discovery Program:* [A JOIDES Resolution engineering cruise began on April 15, 2021. The next science expedition is now expected no sooner than August 2021.]

—*National Center for Atmospheric Research (NCAR):* Aircraft field campaigns deferred or canceled. [Completion of the new aviation facility at Broomfield has been delayed primarily due to challenges in obtaining final inspections from the county; occupancy is now expected in approximately July 2021.] The Wyoming supercomputer center is part of National COVID–19 Computing Consortium. NCAR facilities remain closed to the public with most of the staff teleworking. Many planned field campaigns are being deferred further into 2022 and 2023 because of ongoing travel restrictions. Most internships, fellowships, and workshops have moved on-line.

—*Ocean Observatories Initiative (OOI):* Servicing cruises for all OOI arrays have been concluded after resumption during the summer of 2020. Repair of a fault in the Southern Line of the Regional Cabled Array is likely to occur in summer 2021.

—*Seismological facility for Advancement of Geosciences (SAGE):* Data flowing, all staff teleworking. Removal of the Alaska Transportable Array is expected to be possible in summer 2021, with data flow continuing until September 30, 2021 for those stations that have not yet been removed.

MPS

—*Arecibo Observatory:* The Arecibo 305-m telescope platform collapsed due to cable failure on December 1, 2020. Post-hurricane (2017) repairs to other portions of the Observatory are being expedited as safety permits during the 305-m cleanup process.

—*Center for High-Energy X-ray Sciences (CHEXS) at Cornell High-Energy Synchrotron Source (CHESS):* User experiments on all beamlines resumed in late September 2020, with 100 percent remote users. After a normal (non-COVID-related) maintenance period, remote beamline runs resumed on January 20, 2021.

—*Green Bank Observatory:* All public activities, meetings, and conferences halted. Science operations continue.

—*Large Hadron Collider (LHC):* [CERN continues to request that employees and visitors (including NSF-funded researchers) telework full time if possible. CERN has implemented measures to reduce on-site vulnerability to infection so that essential work can continue. At the end of April 2021, CERN reported that plans for resuming accelerator operation in 2022 are unchanged, with beam circulation beginning in February 2022.] Collaborations in the U.S. work under the constraints of individual university policies. See High-Luminosity LHC below.

—*Laser Interferometer Gravitational-wave Observatory (LIGO):* LIGO is now in scheduled maintenance/upgrade time. The fourth observation session (O4) is now projected to begin no earlier than June 2022.

—*National High Magnetic Field Laboratory (NHMFL):* Some user experiments resumed on June 15, 2020. [At present, labs at all three sites (Florida State, U. Florida, and Los Alamos National Laboratory) are operational, with pre-

cautions, and a number of staff are still working remotely. NHMFL user experiments continue, but with few or no visitors; visitor numbers are expected to increase gradually over the summer.]

—*NSF's National Optical-infrared Astronomy Research Laboratory (NOIRLab):* Primarily in telework status. All public activities ceased. The Gemini North and South telescopes resumed night-time operations in May and October 2020, respectively. Nighttime science operations and instrument commissioning with 4-meter-class telescopes resumed in October and November 2020. [The COVID–19 lockdown in and around the base operations area in La Serena, Chile has been partially lifted;] night-time operations of telescopes in Chile continue.

—*National Radio Astronomy Observatory:* All public activities, meetings, and conferences halted. Very Large Array and Very Long Baseline Array science operations are continuing. The Atacama Large Millimeter/submillimeter Array (ALMA) in Chile resumed scientific observations on March 17, 2021 after a 1-year outage. [A scheduled ALMA move to more extended array configurations has been deferred until at least May 2021 because of COVID–19 conditions in Chile.]

—*National Solar Observatory (NSO):* Primarily telework with some staff allowed on site for high-priority activities, with observatory management approval. GONG synoptic solar observations continue. Observations with the Dunn Solar Telescope, now being operated by New Mexico State University, were halted for a short period in mid-November 2020 due to COVID–19 restrictions; those observations have now resumed. See below for DKIST construction.

—*National Superconducting Cyclotron Laboratory:* Limited user operations restarted on June 9, 2020, with strict social distancing guidelines. [Operations were halted for maintenance in November 2020 and resumed in April 2021, with the full user program scheduled to resume on May 12, 2021.] Construction on the DOE Facility for Rare Isotope Beams continues.

CONSTRUCTION STAGE FACILITIES

—*Antarctic Infrastructure Modernization for Science (AIMS):* Logistics challenges are expected for upcoming procurements. No AIMS work on-ice occurred during the 2020/2021 season. [COVID–19 limitations also will preclude on-ice construction work in the 2021/2022 season.]

—*Daniel K. Inouye Solar Telescope (DKIST):* High-priority construction activities have resumed on site, with workforce split into two overlapping shifts of approximately 35 workers per shift to reduce worker density. Scientists from the continental U.S. have begun to travel to Hawaii to integrate and commission instruments, depending on restrictions by Hawaii and their home institutions.

—*High-Luminosity Large Hadron Collider:* ATLAS and CMS re-organized work plans to focus on tasks that can be carried out remotely. Lab and shop spaces at U.S. universities contributing to the NSF-funded program are being utilized under COVID–19 restrictions.

—*Regional Class Research Vessels:* Work on vessel construction at the shipyard continues under social-distancing guidelines.

—*Vera C. Rubin Observatory:* Construction operations on site halted in March 2020. A slow ramp-up of summit activity began on September 28, 2020, currently with about 60 project personnel and contractors working on site under COVID–19 safety protocols. The telescope dome is substantially closed. Work on the telescope mount assembly has ramped back up, but is hampered by the inability of contract workers to travel to Chile under current COVID conditions. COVID–19 conditions in Chile, and especially in the La Serena area, are causing some activities to be delayed. Data management development continues with remote workforce.

POST COVID–19

All facilities have been impacted in some way and most are executing multi-phase restoration programs that depend on local COVID–19 conditions. Costs and delays for construction project completion depend on the lengths of project suspensions or slowdowns. Project re-baselining will be needed to formalize revised costs and schedules as the duration and severity of COVID19 impacts evolves.

NSF EPSCoR PROGRAM

Question 3. The NSF EPSCoR program is instrumental to building capacity in States around the country, including my home State of New Hampshire. However, equally important is making sure EPSCoR States are well-represented in NSF's signature large-scale programs, such as the Science and Technology Centers, Engineer-

ing Research Centers, Mid-Scale Infrastructure, and A.I. Institutes, among others. We cannot build true capacity if these States are only small players in NSF's signature advanced research programs. How do you plan to ensure progress is made with more EPSCoR State universities leading these large-scale projects, not just participating?

Answer. An output of EPSCoR achieving its goal will be to see more institutions in EPSCoR jurisdictions leading large-scale research projects. As such, NSF EPSCoR is committed to continuing its three main investment strategies, which help strengthen STEM capacity and capability across all of its participating jurisdictions:

—Research Infrastructure Improvement (RII), which funds awards supporting physical, human, and cyberinfrastructure development;
—Co-funding in partnership with NSF directorates and offices that support individual investigators and groups within EPSCoR jurisdictions that would not be funded without combined, leveraged support from EPSCoR; and
—Outreach, Conferences, and Workshops that bring EPSCoR jurisdiction investigators together with program staff from across the Foundation to explore opportunities in emerging areas of science and engineering aligned with NSF strategic priorities and with jurisdictional science and technology (S&T) goals.

For example, through the EPSCoR Co-funding strategy and during the past few years, higher levels of co-funding for Center-scale projects have been prioritized. EPSCoR has worked with the Mid-scale RI–1 Working Group to increase the number of competitive proposals from EPSCoR jurisdictions. EPSCoR aims to increase co-funding in other areas aligned with NSF's priorities, including future manufacturing, artificial intelligence, and quantum engineering.

Through NSF's EPSCoR outreach activities to EPSCoR jurisdictions, NSF is able to increase awareness of its funding opportunities including larger-scale programs that align with a jurisdiction's S&T plan. By effectively leveraging capacity built through prior NSF EPSCoR investments, institutions in EPSCoR jurisdictions should be able to submit more competitive proposals in which that institution is lead. NSF's commitment to the EPSCoR goals will ensure that EPSCoR-based lead institutions partnering with institutions in non-EPSCoR jurisdictions will receive meaningful benefits to further enhance competitiveness within a jurisdiction and institution.

NEW MAJOR RESEARCH PROJECTS

Question 4a. While we do not have the details for the fiscal year 2022 request yet, I'm concerned that in recent budget requests, NSF has not proposed new major research projects. With the National Academy of Sciences likely releasing the Astronomy and Astrophysics Decadal Survey later this year, I expect that we'll see a suggested plan for future astronomy investments. But, it's difficult for Congress to quickly ramp up and down funding to accommodate large requests.

What are the major new facilities investments that you see coming?

Answer. NSF shares your anticipation of the release of the Astronomy and Astrophysics Decadal Survey. While we are not privy to the results, previous surveys have informed NSF in establishing priorities for new instrumentation and facility investments, including the Atacama Large Millimeter/submillimeter Array and Karl G. Jansky Very Large Array (VLA) radio astronomy facilities, and the Vera C. Rubin Observatory, currently under construction. NSF has active awards supporting early development of an extremely large optical/infrared telescope, the next generation VLA, and the Cosmic Microwave Background Stage 4 experiment, any of which may be identified as priorities in the Decadal Survey. Future NSF budget requests in this area will rely strongly on the community prioritization from the Decadal Survey, which is expected to be released in Summer 2021.

A future construction project must progress through a formal design stage to reach a level of readiness where NSF can feel confident that the project is mature enough that it can be proposed for construction, and where the cost is well-enough defined for NSF and the National Science Board to consider a funding request to Congress and a subsequent construction award. At present, NSF has one potential major facility project in the design stage. That project is the Leadership Class Computing Facility; if constructed, it is expected to support a computing system with an approximately ten-fold time-to-solution performance improvement over Frontera, the current NSF leadership system.

Other projects are in the development stage within individual NSF divisions and directorates but have not yet reached the technical and programmatic readiness for admission to the design stage. Those projects include several of the candidate as-

tronomy projects mentioned above, research vessels such as a state-of-the-art Antarctic research vessel and a next-generation ocean drilling platform, and a new-technology superconducting magnet.

Question 4b. Often times, as newer facilities come online, the legacy facilities are still critical for fundamental scientific research purposes, so it's important to maintain their operations. How does NSF balance paying for the new facilities while maintaining operations at the legacy facilities?

Answer. In contrast to space-based facilities that usually have a relatively short lifetime, NSF's ground-based scientific research facilities typically have productive scientific lifetimes in the range of 30 to 50 years. Furthermore, new facilities enabling research at the scientific frontier tend to be more costly to operate than those that were constructed half a century ago. Therefore, the integrated operations cost of an NSF facility over its full life cycle is typically much higher than the capital cost for construction.

NSF strives to maintain a balance in which it does not start so many new facilities in the near term that it risks the ability to support a broad portfolio of research, both facility-based and independent of facilities, 10–30 years in the future. Of necessity, this requires making assumptions about future appropriation levels and national priorities, which may change over periods shorter than the time scale to develop, design, construct, and bring into operation a new facility. NSF makes use of studies by the National Academies of Science, Engineering, and Medicine, as well as portfolio reviews carried out by other advisory committees operating under the Federal Advisory Committee Act, to prioritize the science that can be carried out by both new and legacy facilities. NSF leadership also works closely with the National Science Board in assessing strategic priorities across the agency and weighing the science return enabled by new facilities with the opportunity cost of committing to long-term operations of those facilities.

A key element of NSF's decision process is the philosophy that NSF should focus on world-leading facilities that are on a scale where Federal investment and engagement are necessary to bring those facilities to successful operation. Older facilities that may no longer be world-leading, that may no longer be strategic scientific priorities, or that serve limited scientific communities, are prime candidates for divestment from the NSF budget in order to make room for newer research infrastructure.

NEW FACILITY TRANSITION FUNDING PILOT

Question 5. Historically, as NSF transitions new facility projects from construction to operations, the cost of operating the facilities falls directly on the science directorates, which cuts into available R&D funding. In fiscal year 2020, the Committee funded a pilot project to cover the operations costs of newly completed facilities to give the research directorates time to absorb the increased costs into their own budgets. The Daniel K. Inouye Solar Telescope was the first project to use this transition funding. What has NSF learned from this pilot project, and previous examples, and what do you see as the future of transitioning these facilities from the MREFC account to the directorates?

Answer. In the report accompanying the fiscal year 2021 Appropriations Bill, Congress requested a report on the NSF response to the 2018 National Science Board Report on Operations and Maintenance of NSF Major Facilities, including an assessment of the Facility Operation Transition pilot project. That report has just been completed and was delivered separately. Briefly, NSF has learned that it is straightforward to assign a portion of the funds from the Facility Operations Transition pilot to appropriate facilities that have recently moved into operations, and there are no showstoppers to executing this type of program. NSF is assessing various options for providing a level of funding assurance for the operating facilities while still remaining flexible enough to respond to differing priorities and appropriation levels in the intervening time period.

ARCTIC RESEARCH

Question 6. In 2016, NSF unveiled a set of "Big Ideas," 10 bold, long-term research and process ideas that identify areas for future investment at the frontiers of science and engineering. One of these Big Ideas is "Navigating a New Arctic." With Arctic temperatures warming faster than nearly everywhere else on Earth, some climate models project that continued warming could produce an ice-free Arctic Ocean in a few decades. These changes offer new opportunities and unprecedented risks to the region. Navigating the New Arctic is an important program, especially for New Hampshire where we're already seeing the impacts of climate change firsthand, including infrastructure affected by rising sea levels and flooding

during high tides. Can you describe NSF's plans for expanding Arctic research in fiscal year 2022 and beyond?

Answer. The Navigating the New Arctic (NNA) Big Idea funds research into the opportunities and risks to natural systems; social and cultural systems; economic, political, and legal systems; and built environments around the world by supporting convergence research needed to inform the economy, security, and resilience of the Nation, the larger region, and the globe. NSF's NNA activities in fiscal year 2022 will focus on enabling advances in priority areas, which will be developed by building on outcomes from fiscal year 2017 to fiscal year 2021 activities. Recently, NSF issued a revised NNA solicitation (NSF 21–524, fiscal year 2021) that focuses on convergent social/built/natural-environment systems science; advances in observation, communication, computation, and data systems; and community-coordination activities. This solicitation added a new 'Collaboratory' track (in addition to our primary 'Planning' and 'Research' tracks) for proposal submissions. Collaboratory Grants submitted to NNA will support the cultivation of long-term ideas, collaborations, research, synthesis, and investment in the future of convergence science in and regarding Arctic change. These awards will support the research community to build new teams and pursue creative and ambitious projects that may not fit into the NNA Planning or Research grant tracks.

The NNA solicitation that NSF expects to issue in fiscal year 2022, will also leverage the fiscal year 2020 multi-year cooperative agreement award creating the NNA Community Office. This collaboration with three offices (Alaska Pacific University, the University of Alaska Fairbanks, and the University of Colorado Boulder) will support coordination among NNA projects; build and strengthen relationships between NNA researchers and Arctic residents; and coordinate effective knowledge dissemination, education, and outreach related to NNA and convergence research in the Arctic. In fiscal year 2022, NSF also expects to build on a recently released Dear Colleague Letter titled, "Update on NSF's Efforts to Improve the Inclusion of Local and Indigenous Voices in Arctic Research" with an accompanying website (nsf.gov/ace) that summarizes efforts made and available resources on broadening participation and inclusion of Indigenous peoples in Arctic research.

In addition to the NNA program, NSF, through the Office of Polar Programs' Arctic Sciences Section, invests in research about the Arctic region and its connectivity with lower latitudes. This program portfolio funds research proposals that advance a fundamental, process, and/or systems-level understanding of the Arctic's rapidly changing natural environment, social and cultural systems, and, where appropriate, to improve our capacity to project future change. OPP also funds Arctic logistical infrastructure and field support capabilities that are available to enable research projects that require field support at sea, in Alaska, Greenland, and other international locations. The OPP Arctic Sciences Section released a new solicitation, without deadlines, in fiscal year 2021 (21–526)[12] seeking full proposals in Arctic Natural Sciences, Arctic Social Sciences, Arctic System Science, Arctic Observing Network, Arctic Cyberinfrastructure, and Arctic Research and Policy Support.

NSF will continue to coordinate and leverage both its core Arctic Sciences programs and NNA-related activities with external stakeholders, including other Federal agencies through the Interagency Arctic Research Policy Committee (IARPC) chaired by the NSF Director; local residents and Indigenous peoples through State and local governance structures of Alaska; and international partners through forums such as the biannual International Arctic Science Ministerial.

QUESTIONS SUBMITTED BY SENATOR JERRY MORAN

PROPOSED NSF BUDGET INCREASE

Question 1a. Of the proposed increases for the National Science Foundation, $1.6 billion is indicated to be for fundamental research and $100 million for increasing participation. This accounts for the total amount of the proposed budget increase for NSF.

Can you please explain how is NSF proposing to fund an entirely new directorate and its associated activities?

Answer. Funding ($864.87 million) for the new Directorate for Technology, Innovation, and Partnerships (TIP) is built into NSF's fiscal year 2022 budget request. TIP will be organizationally structured to house three divisions (Technology Frontiers, Innovation Ecosystem, and Translational Impact) and one office (Partnerships). The

[12] www.nsf.gov/publications/pub__summ.jsp?WT.z__pims__id=5521&ods__key=nsf21526

fiscal year 2022 budget request describes repositioning a set of existing programs focused on cultivating innovation ecosystems and creating pathways for the translation of research solutions to practice; these investments total $364.87 million. In addition, new research funding for TIP ($500.0 million) is provided within the proposed budget increase for NSF to advance the mission of the directorate. The President's budget request for fiscal year 2022 for NSF includes additional details about planned activities and investments through the new directorate.

Question 1b. Does NSF have adequate resources and personnel to stand up the new directorate?

Answer. The fiscal year 2022 request to Congress includes adequate resources and personnel to stand up the new directorate at the funding level specified in the Request. Specifically, the Request includes an increase in the Agency Operations and Awards Management account as well as 100 additional FTEs to support activities across the agency, including activities and FTEs required to stand up the new directorate.

ARTIFICIAL INTELLIGENCE (AI) RESEARCH

Question 2a. The Congress has been supportive of Artificial Intelligence (AI) research, and proposals from the Administration and legislation proposed by the Congress also identify AI as a priority. This area of national importance was further highlighted in the recent report of the National Security Commission on Artificial Intelligence. The country that can harness the power of this computing capability will have an economic and national security advantage that we cannot afford to fall behind on.

How does NSF perceive the importance of AI funding and NSF's role in maintaining the country's leadership in this important area of research?

Answer. AI is advancing rapidly and holds the potential to vastly transform our lives. NSF has a long and rich history of supporting AI research, setting the stage for today's widespread use of AI technologies in a range of sectors, from e-commerce to healthcare to transportation. NSF's significant investments in foundational and use-inspired AI research over the last several decades have enhanced our Nation's economic competitiveness and national security in direct alignment with NSF's mission, all the while giving rise to fundamentally new research directions and opportunities for the future.

Current NSF-funded research is laying the seeds for advances in AI that will transform essentially every area of human endeavor, including science, education, energy, manufacturing, and agriculture, in the years ahead. Cross-cutting these areas are investments in trustworthy AI, and the ethics and safety of AI systems that are central to the field overall. NSF's ability to bring together numerous fields of scientific inquiry uniquely positions the agency to lead the Nation in expanding the frontiers of AI.

Through collaboration and coordination with the Office of Science and Technology Policy, NSF leadership is helping to drive and coordinate AI R&D efforts across the Federal Government. For example, the NSF Director co-chairs the National Science and Technology Council's Select Committee on AI, which advises the White House on interagency AI R&D priorities and establishes structures to improve government planning and coordination. NSF leadership also co-chairs the Machine Learning and AI (MLAI) Subcommittee of the NSTC Committee on Science, which serves as the implementation arm for the Select Committee on AI.

Question 2b. How will the priority of AI research be reflected in the fiscal year 2022 budget request?

Answer. NSF supports fundamental research, education and workforce development, and access to data and advanced computing research infrastructure that collectively enhance AI. In particular, NSF's AI portfolio spans AI algorithms, robotics, human-AI interaction, and advanced hardware and systems for AI, as well as use-inspired research in computational neuroscience, computational biology, and many other disciplines across the full breadth of science and engineering in which NSF invests.

In the fiscal year 2022 Request, AI funding totals $734.41 million, which includes $69.11 million in for the National AI Research Institutes. NSF will continue support for foundational research in AI, including machine learning (ML) and deep learning, natural language technologies, knowledge representation and reasoning, robotics, and computer vision, along with the fairness, accountability, transparency, explainability, safety, security, and robustness across all areas of AI. In addition to foundational research in these areas, NSF will continue to support translational re-

search that links AI innovation with science and the economy, including agriculture, manufacturing, biotechnology, and health. Equally important NSF will continue to invest in education and learning to grow the human capital and institutional capacity needed to nurture the next generation of AI researchers and practitioners.

NSF's budget request for fiscal year 2022 includes details about planned activities and investments in AI research, education, and infrastructure.

SCIENCE AND SECURITY

Question 3. Please provide NSF's current efforts to combat the growing and evolving problem of foreign influence and how NSF balances the security of our research enterprise and the NSF's culture of openness in research and collaboration internationally?

Answer. The National Science Foundation seeks to maintain a vibrant science and engineering community for the benefit of the Nation. Participation in this community relies on individuals to uphold core principles and values such as openness, transparency, reciprocity, collaboration, and integrity. In recognition of the issues of balance between security and the benefits of openness in research, NSF requested a detailed report on balance and risks from the JASON advisory group in 2019; that report has been used as important input for NSF in sustaining the appropriate balance and in educating our academic science and engineering community about security risks. However, open scientific exchange and research face a challenge from some foreign governments. These governments deliberately disregard these core principles and incentivize participants to acquire U.S. funded scientific research and provide this information to the foreign government. These foreign government efforts target scientists, engineers, and educators of all nationalities working or educated in the United States.

Over the past 3 years, NSF has taken steps to mitigate threats posed by foreign government talent recruitment programs. NSF focuses on the following risks to its funded research from foreign government interference:

—Conflicts of interest and commitment;
—Undisclosed research duplication and researcher commitments to research entities outside their U.S. employer;
—Compromises to the merit review system; and
—Unauthorized use of pre-publication data and information.

Foreign Government Talent Recruitment Program Prohibition for NSF Staff: In July 2019, NSF issued a policy[13] prohibiting NSF personnel and rotators such as Intergovernmental Personnel Act personnel (IPAs) detailed to NSF from participating in foreign government talent recruitment programs. This policy helps prevent inappropriate foreign influence on NSF personnel.

Establishment of the Chief of Research Security Strategy and Policy (CRSSP) Position and Leadership Teams: NSF has reprogrammed existing resources to mitigate risks to research security. Specifically, NSF created and filled the first-in-government position of CRSSP in March 2020—a leadership position which reports to the NSF Director—and the position of CRSSP Chief Data Officer in September 2020.

Internal Communication and Training: CRSSP and relevant offices have set up an "NSF Research Protection Group" email alias to receive and respond to questions from within NSF on issues such as post-award information disclosure and other issues such as how to respond to a PI's request for extended leave to work for a foreign company.

In March 2020, NSF released mandatory training for all NSF personnel on science and security. In summer 2021, NSF will release a second phase of training aimed at staff in positions such as program directors and grants officials that directly communicate with recipient organizations and principal investigators.

Outreach to and Training for the Academic Community: To increase awareness of the risks and compliance with NSF's policies and procedures, NSF participated in numerous meetings and conferences for the domestic and international research community.

NSF and NIH co-chair the Research Security Education and Training Working Group that is part of the National Counter-Intelligence Task Force on Research Security. Through this effort, NSF is coordinating with interagency partners to develop research security training for the research community.

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[13] www.nsf.gov/bfa/dias/policy/researchprotection/PersonnelPolicyForeignGovTalentRecruitment%20Programs07__11__2019.pdf

Strengthening Disclosure Requirements and Processes: As part of its revision to the Proposal & Award Policies & Procedures Guide (PAPPG),[14] NSF announced that use of an NSF-approved format will be required to be used by senior personnel in preparation of both the biographical sketch[15] and current and pending support[16] sections of the proposal. To streamline the process, NSF worked with the National Institutes of Health (NIH) to use SciENcv:Science Experts Network Curriculum Vitae[17] as an NSF-approved format for both sections of the proposal.

Effective October 2020, NSF has implemented new policy for submission of postaward updates to current and pending support information. Additionally, in annual reports, researchers on NSF awards must now notify NSF when active other support has changed since the award was made or since the last reporting period. They must include a revised current and pending support document as part of this notification.

As of October 5, 2020, NSF-funded major facilities must provide NSF with advance notification of potential collaboration with non-U.S. organizations or governments in connection with its NSF-funded award and must await guidance from NSF prior to negotiating terms of any potential agreement.

Partnering with the Office of Inspector General (OIG): Following referrals by the OIG, NSF has recouped millions of taxpayer dollars through actions on awards given to institutions of higher education, and small businesses through NSF award suspension, government-wide suspension, and NSF award termination. NSF has taken additional actions such as removal of PIs from NSF awards and NSF debarment from serving as a reviewer, panelist, or consultant.

Interagency Coordination: In recognition of the importance of working closely with the rest of the U.S. government, NSF participates in the Joint Committee on the Research Environment (JCORE) that was launched by the White House Office of Science and Technology Policy (OSTP) under the National Science and Technology Council in 2019. NSF co-chairs the JCORE subcommittee on research security, the group that brought science agencies and law enforcement together to develop the recommendations that served as the foundation for National Security Presidential Memorandum 33[18] and Recommended Practices for Strengthening the Security and Integrity of America's Science and Technology Research Enterprise.[19]

Promoting and Protecting International R&D Cooperation: NSF engaged with foreign allies and partners in bilateral and multilateral settings to promote policies and practices that increase awareness of risk to research security and improve cooperation on international protection and response efforts. NSF's messaging also underscored that international collaboration is essential to pursuing the frontiers of science.

NSF will continue to work diligently to address the risks of foreign government interference in NSF-funded research so that our research community can continue to contribute to the U.S. economy and to U.S. security.

GEOGRAPHIC DIVERSITY OF AWARD FUNDING

Question 4. NSF has historically had a concentration of a majority of its funds being awarded to a minority of States. There is no limitation on where good research ideas can emerge from and the demand for technically skilled workers can be found across the country. How will NSF's proposed budget, and its current research programs, improve geographic diversity and contribute to having a technically capable workforce across the Nation?

Answer. NSF's mandate is to promote science nationwide. EPSCoR allows NSF to truly fulfil that duty, making sure that "across the Nation" means across all of the Nation, not just places fortunate enough to have extensive research infrastructure. EPSCoR enhances the research competitiveness of targeted jurisdictions (States, Territories, commonwealth) by strengthening STEM capacity and capability. To achieve this goal, EPSCoR aims to stimulate research that is fully competitive in NSF disciplinary and multidisciplinary research programs. These activities promote and catalyze STEM workforce development, broadening participation, and economic growth. Developing research capacity in participating institutions of all types and

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[14] www.nsf.gov/bfa/dias/policy/researchprotection/PersonnelPolicyForeignGovTalentRecruitment%20Programs07__11__2019.pdf

[15] www.nsf.gov/bfa/dias/policy/biosketch.jsp

[16] www.nsf.gov/bfa/dias/policy/cps.jsp

[17] www.ncbi.nlm.nih.gov/sciencv/

[18] https://trumpwhitehouse.archives.gov/presidential-actions/presidential-memorandum-united-states-government-supported-research-development-national-security-policy/

[19] https://trumpwhitehouse.archives.gov/wp-content/uploads/2021/01/NSTC-Research-Security-Best-Practices-Jan2021.pdf

serving varied student populations is an integral part of EPSCoR's vision and mission.

In addition to EPSCoR, NSF supports numerous activities to expand the U.S. STEM enterprise regardless of gender, race or ethnicity, geographic location, socioeconomic status, or physical capability. Examples of these activities include:

—NSF's Advancing Informal STEM Learning (AISL) program supports STEM learning opportunities outside of schools, for example at local science museums and community centers. This program encourages projects based in rural communities. One recent AISL project based in New Hampshire established a network of more than 100 rural libraries to support STEM learning in small towns across America.

—NSF's Advanced Technological Education (ATE) program focuses on the education of technicians for the cutting-edge, high-technology fields that drive our nation's economy. These awards to community colleges, which are widely distributed throughout America, feature strong engagement with employers to educate science and engineering technicians for the good jobs of the future.

NEW DIRECTORATE ORGANIZATIONAL MODEL

Question 5. It is being suggested that NSF treat the proposed Technology Directorate contained in the budget request as a DARPA like organization. Does the DARPA model fit within NSF and its longstanding history of peer reviewed science?

Answer. The proposed directorate for technology, innovation, and partnerships will serve to accelerate use-inspired research. Past practice has shown the value in defining milestones and metrics for such research, and in additional oversight that tracks appropriate progress. NSF has experience with these approaches in specific programs and will look to build upon these going forward. In short, NSF views the new directorate not as a DARPA-like organization, but rather as a means to establish a new model for research and innovation advancement—one that enhances existing award and oversight approaches and pilots new ones in support of accelerating technology outcomes.

NEW DIRECTORATE LEGISLATIVE AUTHORITIES

Question 6. There are proposals both in the Congress and from the Administration that propose to create a new technology directorate to fund a number of activities within NSF. They propose to enable partnerships, create new research centers, and fund graduate students. These are all activities NSF currently engages in, and has done so for decades. Does NSF need any new legislative authorities to implement the activities envisioned in the fiscal year 2022 budget request or the American Jobs Plan? If so, what are they?

Answer. Congress provided NSF the authority to make this kind of change to its organizational structure. The agency greatly values our close relationships with the Congress and we look forward to working with you throughout the process as this proposal is considered.

QUESTIONS SUBMITTED BY SENATOR JOE MANCHIN, III

GREEN BANK OBSERVATORY OPERATIONS (GBO) PLANNING

Question 1. The fiscal year 2021 Omnibus shared the Appropriations Committee's support of NSF's effort to develop multi-agency plans at Green Bank and provides no less than the request level to support operations and maintenance at Green Bank through these plans or directly through NSF. What can you tell me about the agency's efforts to develop a multi-agency plans since this bill has passed? Can you provide me assurances that the fiscal year 2022 budget request will fully sustain the current operations of GBO and staff levels?

Answer. The combined NSF and partner funding for fiscal year 2021 will fully support GBO operations and maintenance. Partner contributions represent approximately 30–35 percent of the total operations budget of GBO. These contributions come mostly from non-Federal partners; however, NSF continues to work within both the Federal and non-Federal communities to develop new viable partnerships and collaborations. The recent proof-of-concept test of a GBO radar transmitter opens a new range of capabilities and potential partnership opportunities for GBO. The fiscal year 2022 budget request encompasses support for GBO telescope operations, maintenance, infrastructure upgrades, telescope management, as well as funds for education and public outreach.

NSF'S MAJOR INFRASTRUCTURE MAINTENANCE AND UPGRADE PROCESSES, INCLUDING GREEN BANK

Question 2. The collapse of the Arecibo Observatory in Puerto Rico last year was shocking. I understand that a review is underway to determine what happened. Please explain to me the process NSF uses to determine maintenance and upgrade requirements for its science infrastructure. Is the NSF undertaking a review of its other major assets, including Green Bank, to ensure that another significant structural failure is avoided? How would you grade the infrastructure at Green Bank and what steps are you taking to ensure that it is upgraded in a timely fashion to ensure its continued contribution to science and competitiveness? What is in the fiscal year 2022 budget to upgrade and provide maintenance at Green Bank?

Answer. Maintenance of the infrastructure at NSF's major facilities is an important responsibility of the awardees who operate the facilities, and the status of that maintenance is part of NSF's annual program plan reviews and renewal/competition decisions. As a result of the Arecibo platform collapse, NSF is undertaking a portfolio-wide review of how major facility conditions assessments are conducted and incorporated into the planning cycle, how they are reported to and evaluated by NSF, and subsequent steps that NSF takes based on those evaluations. This review could result in more standardized approaches across the major facility portfolio as well as changes to the award terms and conditions. NSF expects preliminary findings from this review in Q4 fiscal year 2021.

The fiscal year 2022 budget request for GBO encompasses support for telescope operations, maintenance, infrastructure upgrades, telescope management, as well as funds for education and public outreach. GBO conducts regular inspections and maintenance of numerous components of its telescopes and site infrastructure. The Green Bank Telescope (GBT), dedicated in August 2000, undergoes periodic rigorous structural reviews; the last full structural inspection of GBT by an independent engineering firm was completed in 2018, and additional inspections are scheduled to be completed in 2021 and 2024. NSF-funded upgrades to the GBT are reviewed through the standard merit review process and are often driven by community priorities and strategic initiatives. For instance, in fiscal year 2020, NSF funded two upgrades (GBT Data Archive and a Cyclic Spectroscopy system) through the Windows on the Universe Big Idea that will keep the GBT competitive for multi-messenger astrophysics. Some upgrades to the GBT are externally funded, such as the recently tested radar transmitter system, developed as part of a cooperative research and development agreement between NRAO, GBO, and Raytheon Intelligence and Space.

GREEN BANK TELESCOPE CAPABILITIES

Question 3. In November of 2020 at the Green Bank Observatory, the National Radio Astronomy Observatory (NRAO) collaborated on a proof-of-concept experiment to test the feasibility of adding a transmit capability to the Green Bank Telescope. A signal was sent by an experimental transmitter from Green Bank to the Apollo 15 landing site on the Moon. When the signal was received back on earth, a stunning image of that section of the moon emerged. What did we learn from the experiment? How can this new capability contribute to our study of the solar system and other observing requirements? What are the next steps, and is there funding the fiscal year 2022 budget to continue this work?

Answer. The proof-of-concept test, developed as part of a cooperative research and development agreement between NRAO, GBO, and Raytheon Intelligence and Space, positively demonstrated the capabilities of a prototype modern GBT radar system transmitter and the 10 VLBA antennas to function as a radar imaging system. This demonstration opens a range of new capabilities for both NRAO and the GBO and allows both to pursue new lines of research with potential applications for planetary astronomy and planetary defense. Leveraging lessons learned from the development and testing of the 700-watt transmitter, NRAO, GBO, and Raytheon are exploring options to develop a 500-kilowatt system that could image objects in the Solar System with unprecedented detail and sensitivity.

APPRENTICESHIP PROGRAMS

Question 4. The United States needs a highly trained and skilled workforce to compete internationally—including highly trained machinists to build and maintain the large structural parts of our great observatories. In my State, Marshall University has partnered with the Green Bank Observatory to develop the skilled workforce needed to maintain operations of its numerous radio telescopes and other critical instruments at the facility. The Observatory's Mechanical Division has teamed

with the Robert C. Byrd Institute (RCBI) at Marshall University to manufacture everything from large structural parts to small, high-precision receive components, all while providing the framework, support, and training to grow its own talent. Today, RCBI assists companies and organizations in 19 States to establish registered apprenticeship programs in manufacturing. In your view, what should we be doing to ensure we have a pipeline of young people in these fields? How can we expand or better support critical programs like the Apprentice Works initiative at the Robert C. Byrd Institute (RCBI) at Marshall University?

In your view, what should we be doing to ensure we have a pipeline of young people in these fields?

Answer. The Advanced Technological Education (ATE) Program is a congressionally mandated program that is specifically focused on preparation of the technical workforces that you describe. It intentionally focuses on career pathways that have multiple entry points and multiple career destinations.

—Many ATE projects support efforts that bring technical education into high schools. Typically, these projects enable high school students to earn credentials that count toward their high school diploma as well as toward an associate degree at the partnering community college. These efforts help to create pathways from high school to community college to careers in advanced technological fields.
—ATE projects support career pathways from community college and associate degrees into 4-year technical programs, such as engineering technology.
—ATE projects also support entry of current technical workers into new technical areas, such as quantum technology.

Through ATE, NSF is supporting the right kinds of efforts, but we need help to solve the major reasons that more people are not pursuing advanced technological careers: perception. These trades-related technical fields are not considered as valued career options by potential students or their families. As a result, it can be difficult to maintain the necessary enrollment to ensure continued institutional support for various technical education programs.

In addition, community/technical colleges often do not have sufficient funds to purchase, maintain, and update the high-cost equipment on which students need to train. The issue of how to sustain programs is one with which NSF grapples frequently, since we typically view our funding as catalytic rather than permanent.

We anticipate that partnerships between NSF and industries that need advanced technological workers could help to address both the reputation of technical fields and equipment needs. In addition, some of our ATE projects are experimenting with simulations and remotely operated equipment to enable students to learn how to use the equipment. Such approaches can help institutions share equipment resources with each other and, perhaps, with industry facilities.

As it relates to supporting programs such as the Apprentice Works initiative at the Robert C. Byrd Institute, supporting apprenticeships is a key element of GBO's robust program of skilled workforce development and fortification of the STEM pipeline, which includes:

—a hands-on summer program in Observatory maintenance for undergraduate students and recent high school graduates,
—opportunities for local co-op students to work with the Electronics and Mechanical Engineering divisions and be considered for potential hiring,
—serving as the hub for the NSF INCLUDES-funded First2 STEM Success Alliance in West Virginia, which aims to increase the persistence of rural first-generation students in STEM fields through their first 2 years of post-secondary education, and
—a variety of other education and public outreach programs for K–12 students and beyond.

In our view, these efforts are best served by ensuring that they are well-integrated into GBO's core mission of advancing radio astronomical research and supporting complementary research and educational activities. This is because fundamental research and the activities surrounding it can be beneficial locally, regionally, and nationally, and observatories such as GBO are key engines of innovation and growth, often providing the necessary infrastructure for them.

The ATE Program also supports apprenticeships and other workplace experiences for both students and faculty. For example, students and faculty can receive funding to work in an Industry-University Cooperative Research Center, thus gaining hands

on support in emerging technical fields.[20] In addition, every ATE project has its own business/industry partnerships, and these partnerships provide access to apprenticeship opportunities and mentoring for students in relevant technician programs. However, smaller or newer companies may be unable to pay students for their internship experiences.

EQUITY IN INVESTMENTS BEYOND EPSCoR

Question 5. Federal research funding has economic and quality of life implications for States, communities and individuals across the Nation. Unfortunately, that Federal research funding is not widely distributed but concentrated in a few States and institutions. The NSF EPSCoR program was created by Congress in 1979 to ensure that significant scientific discovery not be limited just to those States with substantial resources. However, currently the 25 States, including WV, and three jurisdictions that are under the NSF Established Program to Stimulate Competitive Research receive about 10.15 percent of NSF research funding. What additional measures steps can NSF take, beyond EPSCoR, to improve equity in its investments to help smaller, more rural States like WV, nurture our talent in emerging new advanced technologies? Do underrepresented groups include first generation students from rural areas as in Appalachia?

Answer. NSF strongly supports nurturing STEM talent in rural areas. Each of the NSF research units make use of national data to monitor workforce trends and needs. In addition to workforce development programs in EHR, several directorates have funded disciplinary-focused projects targeting the career development of rural students, such as GEO's GP–EXTRA: Expanding GeoFORCE Alaska, a Pathway to STEM Degrees for Rural, First-Generation, and Alaska Native Students (#1701259—University of Alaska Fairbanks Campus); and ENG's Research: Looks Like Me: Leveraging Funds of Identity to Enhance Engineering Career Pursuits in Rural/Reservation Communities (# Montana State University) and EAGER: MAKER: Maker Fridays: Engaging Rural and Underrepresented High School Students in Pre-Engineering Design and Creativity (#1723704—Northeast Community College).

At a roundtable on rural STEM education held in July 2019, the Assistant Director for Education and Human Resources reported that at that time in EHR alone, there were 350 active awards involving rural STEM education across 21 different programs. Several programs are of particular importance for nurturing talent in rural America: Teacher recruitment and preparation is important everywhere but there are special challenges in recruiting rural teachers and helping them stay current. NSF's Robert Noyce Teacher Scholarship program addresses recruitment and preparation, while NSF's Computer Science for All program supports K–12 teachers with the support needed to teach computer science and computational thinking. NSF's Innovative Technology Experiences for Students and Teachers (ITEST) program supports innovative models to engage preK–12 students in the technology-rich experiences that will excite them about STEM and STEM careers while also engaging their teachers. STEM learning opportunities in informal environments can contribute to STEM education for the entire community. NSF's program on Advancing Informal STEM Learning (AISL) supports these experiences and research on what is most effective.

NSF's Advanced Technological Education (ATE) program focuses on the education of technicians for the cutting-edge, high-technology fields that drive our Nation's economy. These awards to community colleges feature strong engagement with employers to educate science and engineering technicians for the good jobs of the future.

Depending on the definition of "rural," there are now either about 200 (Department of Education) or 600–800 (Rural Community College Alliance) rural community colleges in America. In addition to the ATE program, which focuses primarily on the skilled technical workforce at community colleges, a recently published Program Description entitled "Advancing Innovation and Impact in Undergraduate STEM Education at Two-year Institutions of Higher Education." focuses on STEM at community colleges.

Because the effort to nurture talent may involve a whole community, NSF INCLUDES supports projects that involve multiple parts of the educational system and organizations within communities. One such example is the NSF INCLUDES Alliance: Expanding the First2STEM Success Network, whose primary place of performance is the Green Bank Observatory in West Virginia. The Alliance aims to improve the college enrollment rate and success of undergraduate STEM students,

[20] www.nsf.gov/pubs/2021/nsf21076/nsf21076.jsp?WT.mc__id=USNSF__25&WT.mc__ev=click

with emphasis on rural first-generation students through their first 2 years of college. This innovative project was co-funded by EPSCoR.

Institutions and individuals in EPSCoR jurisdictions should continue to leverage NSF EPSCoR's outreach mechanism, which supports outreach travel that enables NSF staff to directly engage and inform the EPSCoR research community about NSF opportunities, priorities, programs, and policies. From fiscal year 2016 through fiscal year 2020, 11.3 percent of total NSF funding supported institutions and individuals in EPSCoR jurisdictions. The NSF EPSCoR program continues to promote engagement of the EPSCoR community in NSF and other national activities.

QUESTIONS SUBMITTED BY SENATOR JEFF MERKLEY

COVID–19 IMPACT ON STEM RESEARCH

Question 1a. The COVID–19 pandemic has impacted scientific and academic research in unparalleled ways. One January 2021 study from NORC at the University of Chicago found that graduate academic institutions reported that 67 percent of their STEM research was delayed or discontinued due to the pandemic. We also know that students from underrepresented backgrounds—including students of color, women, students with caring responsibilities, and those hailing from rural communities—have shouldered the impacts of these delays the hardest.

What, if any, flexibilities is the NSF arranging for previous grantees to adjust grant timelines and requirements in recognition of the unalterable delays in research associated with academic closures and other COVID–19 impacts?

Answer. Many of the most impactful efforts to assist the research community and workforce were contained in flexibilities authorized by the Office of Management and Budget from the requirements specified in 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards. NSF implemented flexibilities authorized by the following OMB Memoranda to support the research enterprise through the COVID–19 pandemic:

—NSF Implementation of OMB Memorandum M–21–20, Appendix C [21]
—NSF Implementation of OMB Memorandum M–20–26 [22]
—NSF Implementation of OMB Memorandum M–20–20 [23]
—NSF Implementation of OMB Memorandum M–20–17 [24]

With specific regard to implementation of OMB Memorandum (M–20–26), NSF worked closely with colleagues at the National Institutes of Health (NIH) to develop consistent implementation language that was to be used by both NSF and NIH. This standardization was vital to the research community to help mitigate the reduction of administrative burden associated with individual agency implementation of OMB flexibilities.

Question 1b. As research institutions continue to recover from the COVID–19 pandemic, acknowledging the disproportionate impacts felt by some members of the academic community, how can the NSF best support these institutions in ensuring an equitable and sustainable recovery?

Answer. NSF recognizes that the pandemic has disproportionately impacted institutions that serve students from underrepresented backgrounds. We also recognize the heterogenous nature of these institutions and consequently, the support must address a wide range of challenges. NSF's emphasis has focused on increased support for undergraduate researchers through stipends, internships, and scholarship programs, as well as postdoctoral fellowships and support for internship programs. NSF is dedicating both fiscal year 2021 Current Plan and American Rescue Plan funding to COVID recovery, including support for individuals and institutions disproportionately affected by the impacts of the pandemic. For example, in the Directorate for Education and Human Resources, home to programs focusing on HBCUs, Tribal Colleges, and Hispanic Serving Institutions, funding is available to support for postdoctoral scholars, community colleges, and research focused on racial equity. Funding opportunities for post-docs and other new investigators have been created or augmented in several other research domains, for example, in computer science, ocean science, polar science, mathematical and physical sciences, and engineering.

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[21] www.nsf.gov/bfa/dias/policy/covid19/covid19__nsfomb2120implementation.pdf
[22] www.nsf.gov/bfa/dias/policy/covid19/covid19__nsfomb2026implementation.pdf
[23] www.nsf.gov/bfa/dias/policy/covid19/covid19__nsfomb2020implementation.pdf
[24] www.nsf.gov/bfa/dias/policy/covid19/covid19__nsfombimplementation.pdf

Faculty members with young families were one of the groups whose work was adversely affected by the pandemic. In response, NSF issued a *Dear Colleague Letter*[25] that expanded the availability of support for Career Life Balance supplements to all research personnel on any research grant. In addition, during the course of the pandemic, *proposal deadlines*[26] for over 30 funding opportunities were delayed to provide potential principal investigators with additional time to prepare proposals.

Question 1c. How can Congress further support NSF as we consider the long-term impacts of the COVID–19 pandemic on the science and technology research community?

Answer. Congress can further support NSF's ongoing response to the public health and economic crisis caused by the COVID–19 pandemic by continuing to support in helping research communities, institutions, and people adversely impacted by COVID. Beginning in fiscal year 2020 and continuing into fiscal year 2022, NSF has increased investments in programs that aid institutions and groups of people most affected by COVID–19, with an emphasis on supporting individuals at vulnerable career transition points.

The disruption of COVID–19 has impacted the academic and research community, curtailing research activity and creating barriers to advancement in STEM careers. NSF recognizes the critical need to mitigate these impacts on the Nation's current and future scientific workforce. In fiscal year 2021, NSF will invest R&RA and EHR funds to assist the most severely impacted and most vulnerable, including individuals at vulnerable career transition points, especially students, postdoctoral fellows, and early career faculty. NSF will support this effort through new awards, supplements, and extensions of existing awards. To this end, NSF will increase investments in STEM education, EPSCoR States, community colleges, and Master of Science in Information Systems programs, using established programs across the Foundation. Additional funds provided via The American Rescue Plan of 2021 (Public Law 117–2), from which NSF received $600 million, will be similarly devoted to these priorities. NSF continues to monitor the situation among our varied communities and stands ready to respond further as needed in fiscal year 2022, as we have in fiscal year 2020 and fiscal year 2021.

Fiscal year 2022 investments include these areas:

—*Expand research on the biology, ecology, and evolution of infectious diseases.* NSF will invest in projects that advance understanding of the origins of emerging infectious diseases and their transmission, and the biotechnologies needed for detection and intervention. fiscal year 2022 investments will be increased in biotechnology, programs such as Ecology and Evolution of Infectious Diseases, Enabling Discovery through Genomic, and Designing Synthetic Cells Beyond the Bounds of Evolution, and the Sentinel Cells for Surveillance and Response to Emergent Infectious Diseases Dear Colleague Letter.

—*Initiate new funding opportunities to support development of predictive intelligence for pandemic prevention.* NSF will support planning and research activities for highly convergent approaches that combine biological science, computer and information sciences, engineering, and social and behavioral sciences to detect, model, and contain emerging infectious diseases before they can spread to a pandemic stage.

—*Increase understanding of social factors for pandemic prevention.* NSF will invest in foundational research in social, behavioral, and economic impacts of pandemics, including improved public understanding, international collaborations to hasten recovery, and research that improves operations and logistics of pandemic-related supply networks and vaccine distribution.

QUESTIONS SUBMITTED BY SENATOR SHELLEY MOORE CAPITO

PANDEMIC PERIOD SUPPORT FOR GREEN BANK OBSERVATORY

Question 1. What efforts in particular has NSF made during the pandemic period to support operations at Green Bank Observatory?

Answer. NSF has continued to support GBO's operations, maintenance, infrastructure upgrades, telescope management, and education and public outreach activities during the pandemic period. NSF supported the implementation of flexibilities defined in OMB memos, allowing GBO to adapt its operational model while continuing

[25] www.nsf.gov/pubs/2021/nsf21021/nsf21021.jsp
[26] www.nsf.gov/bfa/dias/policy/covid19/covid19__deadlines.pdf

to support its staff through critical transitions. This has permitted GBO to adapt to operating under pandemic conditions, conducting remote observations with the GBT and, when possible, migrating its community engagement activities to virtual formats. A phased return to on-site work is occurring and being closely monitored, with extensive safety measures in place; the site remains closed to visitors. In its oversight role, NSF is actively assessing the impacts of the pandemic on GBO to inform budget requests beyond fiscal year 2022.

"OPEN SKIES" SCIENCE

Question 2. On "open skies" science being used at NSF—Would you please explain why this program is so important? Is this program oversubscribed and what does oversubscription in this instance mean?

Answer. Open Skies time is made available to the broad astronomical community through a peer review process, selecting the best proposals based on scientific merit. This NSF-sponsored observing time is critical to ensuring that the scientists with the best ideas have access to the telescope to make the observations necessary to advance their science. The GBT is currently used for observations approximately 6,500 hours per year. Of these, approximately 4,500 hours are available as Open Skies and are allocated to members of the general scientific community through community-based merit review managed by GBO. Hundreds of scientists use the GBT each year for research that spans virtually every field of modern astrophysics. The "oversubscription rate", or the ratio of the Open Skies time requested to the time allocated, has been in the range 2–3 since fiscal year 2015; this level is generally considered healthy for astronomical facilities. Non-open-skies time (about 2,000 hours) at GBT is provided to GBO partners who make significant financial contributions to facility operations.

QUESTIONS SUBMITTED BY SENATOR SUSAN M. COLLINS

COVID–19 IMPACT ON PUBLIC SCIENTIFIC RESEARCH

Question 1. I am concerned about the disruption caused by the pandemic to public scientific research, including at universities like the University of Maine, which is led by your former colleague, Joan Ferrini-Mundy. I am a cosponsor of the Research Investment to the Spark the Economy (RISE Act), which would direct nearly $25 billion in relief for research workforce and institutions, including $3 billion to NSF. What are NSF's plans to support the research community so that federally funded work that was underway before the pandemic can be completed?

Answer. Throughout the pandemic NSF Program officers have been working closely with award recipients to provide supplements, no cost extensions, and other forms of support to help with the impacts and challenges COVID–19 has presented. It is of utmost importance to NSF that our awardees have every opportunity to complete their research and we are exhausting all possibilities to accomplish that goal.

In response to the COVID–19 virus, NSF mobilized funding from the "Coronavirus Aid, Relief, and Economic Security" (CARES) Act, as well as NSF's regular appropriations, to help the country respond to and recover from the COVID–19 pandemic. NSF supports a wide range of research funding mechanisms, including Rapid Response Research, or RAPID, a fast-tracked grant process to accelerate critical discoveries.

In addition to funding provided through the targeted American Rescue Plan legislation, NSF is providing focused support through regular fiscal year 2021 appropriations and the fiscal year 2022 Request. This funding will help people who are at vulnerable transition points in their research careers, such as those who have recently received their graduate degrees and other early career scientists, as well as disadvantaged institutions, such as those in EPSCoR states and minority-serving institutions. The investments are spread across new and existing post-doctoral programs, research initiation awards for early-career faculty, supplements to existing awards, and targeted investment in several programs including the Historically Black Colleges and Universities—Undergraduate Program (HBCU–UP), Historically Black Colleges and Universities—Excellence in Research (HBCU-EiR), Hispanic Serving Institutions (HSIs), Tribal Colleges and University Program (TCUP), and others across the directorates. NSF recently posted a Science Matters article[27] high-

[27] https://beta.nsf.gov/science-matters/researchers-apply-covid-19-lessons-prevent-future-pandemics

lighting NSF's efforts in the fight against the pandemic and current efforts to help researcher get back on track and supporting efforts to prepare for future pandemics.

RAPID GRANTS USING COVID–RELIEF FUNDS

Question 2. I commend NSF's work over the past year to make RAPID grants available using COVID-relief funds, which have been granted to researchers who are helping the U.S. better understand and fight the pandemic. Would you summarize some of the key findings and learnings that are coming out of that collective body of work?

Answer. The RAPID proposal type is specifically implemented by the Foundation to address funding requests where there is a severe urgency with regard to availability of, or access to, data, facilities, or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. The Project Description in a proposal is expected to be brief—no more than five pages—and must include clear statements as to why the proposed research is urgent and why RAPID is the appropriate mechanism for supporting the proposed work.

Given that RAPID awards support projects requiring a rapid release of funds and thus an expedited merit review process, this mechanism provides NSF with the ability to make funding decisions quickly and in accordance with NSF policies and procedures. Since March 2020, the Foundation has made over 750 RAPID awards related to COVID–19. These total over $109 million from both regular fiscal year 2021 and CARES Act appropriations.

POST–PANDEMIC INVESTMENT RECOMMENDATIONS

Question 3. After a full year of battling COVID–19, it's important to understand the long-term ramifications of the pandemic on all aspects of our society. What investments do you recommend for supporting science, technology, education, and innovation in a post-pandemic time?

Answer. The COVID–19 pandemic has revealed the scientific challenges that must be overcome to prevent and contain emerging and future infectious diseases and highlighted our vulnerability as a nation to the continuous threat they pose. NSF has set three closely interrelated strategic goals to mitigate the impacts of the pandemic on the Nation's scientific community and enable better predictions of future outbreaks.

—Promote interdisciplinary research to improve our understanding of how pathogens arise, evolve, and spread, and on new ways to reduce their transmission, infectivity, and virulence.
—Develop a more effective intelligence capability for emerging infectious diseases by leveraging advances in "omics," synthetic biology, structural and computational biology, remote sensing, the Internet of Things/networked sensors, data integration and analytics, artificial intelligence, and predictive modeling that incorporates human and social behavior.
—Further our understanding of the societal factors essential to strengthen the national resilience to future outbreaks and other natural disasters, through research on risk communication, robust supply chains, market responses and collaborative, virtual learning environments.

NSF recommends three investments areas in fiscal year 2022 and beyond for supporting science, technology, education, and innovation in a post-pandemic time.

—Expand research on the biology, ecology, and evolution of infectious diseases. NSF will invest in projects that advance understanding of the origins of emerging infectious diseases and their transmission, and the biotechnologies needed for detection and intervention. fiscal year 2022 investments will be increased in biotechnology, programs such as Ecology and Evolution of Infectious Diseases, Enabling Discovery through Genomic Tools, and Designing Synthetic Cells Beyond the Bounds of Evolution, and the Sentinel Cells for Surveillance and Response to Emergent Infectious Diseases Dear Colleague Letter.
—Initiate new funding opportunities to support development of predictive intelligence for pandemic prevention. NSF will support planning and research activities for highly convergent approaches that combine biological science, computer and information sciences, engineering, and social and behavioral sciences to detect, model, and contain emerging infectious diseases before they can spread to a pandemic stage.
—Increase understanding of societal factors for pandemic prevention. NSF will invest in foundational research in social, behavioral, and economic impacts of

pandemics, including improved public understanding, international collaborations to hasten recovery, and research that improves operations and logistics of pandemic-related supply networks and vaccine distribution.

The continuous support from Congress will be critical to make new research, infrastructure, and workforce investments to strengthen the Nation's scientific and technological capacity to predict and prevent future pandemics.

QUESTIONS SUBMITTED BY SENATOR JOHN KENNEDY

TAXPAYER DOLLAR STEWARDSHIP

Question 1. We all agree that the United States has to be the world leader in terms of scientific technology. However, we also must be conscientious stewards of taxpayers' dollars. Are there any areas of scientific funding by the U.S. Government that you see as wasteful, or at least as not benefiting our Nation's scientific competitiveness? And how much do these areas/programs/etc. receive?

Answer. Being a conscientious steward of taxpayers' dollars is at the very heart of NSF's merit review process. Over its more than 70-year history NSF has exemplified the merit review process which has been emulated throughout the world as the gold standard. It is designed to ensure that, as far as possible, competitive peer review identifies the best portfolio of ideas for funding in accord with the Foundation's two main review criteria—Intellectual Merit and Broader Impacts.

The National Science Board, NSF's policy body, issues a yearly merit review process digest to assure its stakeholders that NSF implements the merit review process with integrity, and in a fair, competitive, and transparent manner. The 2019 Digest was published in December 2020 [28] and the 2020 Digest will be out shortly.

Additional high-level NSF mechanisms for understanding, safeguarding, and improving this critical Foundation process include meetings of external Advisory Committees (ACs), Committee of Visitor (COV) reports, and biennial surveys of proposers and reviewers. COV reports are a key factor in maintaining the quality and integrity of NSF's merit review process. They provide input on such critical elements as the qualifications of the reviewers, whether the reviews provide substantive explanatory comments and a well-documented rationale, and whether the resulting program portfolio is appropriately balanced.

It is also important to note that the benefits of basic research can take years, even decades, to show societal and economic benefit. Some of the most remarkable discoveries and innovations were not even the focus of the original research; consider for example, Polymerase Chain Reaction (PCR). Clinical tests for COVID–19 rely on the genetic identification of the virus, a process made feasible by an NSF-funded discovery of bacteria from thermal pools at Yellowstone National Park. These unique bacteria contain thermostable enzymes that allow for the rapid copying of genetic material through a process called Polymerase Chain Reaction (PCR). Only a tiny amount of genetic material is retrieved through a nasal swab, far too small an amount to be readily detected. Using PCR, scientists can amplify the tiny amounts retrieved to a measurable quantity and can then confirm whether a patient has been infected with SARS-CoV-2.

EPSCOR FUNDING IN LOUISIANA

Question 2. Louisiana is an Established Program to Stimulate Competitive Research (EPSCoR) State supported by the National Science Foundation (NSF) that develops innovative research and opportunities for students and faculty at many of Louisiana's prominent Universities. With Louisiana Universities' role in innovative scientific research through the National Science Foundation, will you continue to ensure these students receive the funding they need to advance their research?

Answer. Yes, for the United States to be a global leader in scientific and technological innovation, NSF commits resources to support science and engineering discoveries and develop a technically capable workforce from across the Nation: rural, suburban, urban, and in-between. EPSCoR enhances the research competitiveness of targeted jurisdictions (States, Territories, commonwealth) by strengthening STEM capacity and capability. To achieve this goal, EPSCoR aims to stimulate research that is fully competitive in NSF disciplinary and multidisciplinary research programs. These activities promote and catalyze STEM workforce development, broadening participation, and economic growth. In addition to EPSCoR funding,

[28] www.nsf.gov/nsb/publications/2020/merit__review/FY–2019/nsb202038.pdf

NSF will continue to support meritorious science and engineering research and the individual researchers, including students, from across the Nation.

Estimated Student Participants in Fiscal Year 2020

Level of Education	Student Count
Graduate Students	45
Undergraduate Students	40
K–12 Students	3,705

Students Externally Engaged in Fiscal Year 2020

Type of Institution	Student Count
Academic Research Institutions	585
Primarily Undergraduate Institutions	65
Minority-Serving Institutions	25

GEOGRAPHIC DIVERSITY OF SBIR/STTR AWARD FUNDING

Question 3. Out of the $2.98 billion Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards that the National Science Foundation has issued, just over $16 million went to Louisiana. That is compared to a State like California receiving $626 million or Massachusetts receiving $323 million from the NSF, which accounts for roughly a third of total SBIR/STTR awards from the NSF. I'm concerned that awards are becoming concentrated in certain States. The purpose of the SBIR & STTR programs are to expand the role of small businesses in Federal research and development (R&D). Does it concern you that the NSF's SBIR/STTR funding is propping up R&D funding in certain States, while other States are being left behind? What outreach is the NSF doing to ensure that SBIR/STTR awards are being disbursed throughout the United States? How can we get more SBIR/STTR awards to historically underserved States?

Answer. NSF actively conducts outreach to States/communities throughout the U.S., particularly in ones that are underserved. These outreach activities take the form of road shows, workshops, conferences, and office hours. Indeed, they are an essential means to growing awareness about the SBIR/STTR program in all communities.

In addition, through planned investments by the new directorate, NSF anticipates growing the opportunity space for individuals and organizations throughout the country, and particularly in long underserved areas. NSF anticipates catalyzing collaborations between academic researchers, companies, and investors that will in turn spur new small businesses positioned for NSF's SBIR/STTR programs. In this way, the new directorate will serve to address the desire to expand the geography of innovation, well beyond what we are currently able to do.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

MINORITY-SERVING INSTITUTIONS AWARD FUNDING

Question 1. Our Nation's Historically Black Colleges and Universities (HBCUs) are leaders in conducting vital research and educating the next generation of our Science, Technology, Engineering, and Math (STEM) workforce, graduating 25 percent of African Americans who earn degrees in STEM. Unfortunately, the Center for the Study of Historically Black Colleges and Universities reported in January of this year that only 1.7 percent of National Science Foundation (NSF) research & development funding for institutions of higher educations is awarded to HBCUs. In 2018, only 5.7 percent of NSF funding for institutions of higher education was awarded to all Minority-Serving Institutions, including HBCUs, Hispanic-Serving Institutions, and other MSIs.

What steps are you taking to evaluate how funding is awarded across your programs to ensure this massive disparity is closed?

Answer. NSF continuously evaluates its investment portfolio to address how effectively it is meeting its mission. NSF is committed to enhancing and expanding its impact and reach, as well as disseminating knowledge on the science of broadening participation across the Nation. These evaluations are essential for NSF to enable

science and engineering discoveries, ideas, and develop STEM talent from across the Nation.

The fiscal year 2022 Request to Congress seeks an additional $100 million, roughly a 50 percent increase, in funding for programs that aim to increase participation in science and engineering of individuals from racial and ethnic groups underrepresented in these fields. Funding will support curriculum design, research on successful recruitment and retention methods, development of outreach or mentorship programs, fellowships, and building science and engineering research and education capacity at HBCUs and other minority-serving institutions.

The following information is excerpted and adapted from NSF's Report to Congress on fiscal year 2019 Funding to Minority-Serving Institutions as required by the National Science Foundation Authorization Act of 2002 (Public Law 107–368, Section 18).

NSF's total investment to all MSIs in fiscal year 2019 was $798.6 million. This amount represents 12.9 percent of the $6,196.6 million awarded to all institutions of higher education (IHEs). Within that total, 8.8 percent of NSF's Research and Related Activities account funded research activities at MSIs. From fiscal year 2010 to fiscal year 2019, there has been a 312 percent increase in nominal dollars in NSF's total funding for MSIs. In fiscal year 2019, the investment rose from $771.9 million to $798.6 million. This increase of $26.7 million was due to the following NSF programmatic activities:

—Established Program to Stimulate Competitive Research (EPSCoR) Research Infrastructure Improvement, and EPSCoR Co-Funding;
—Historically Black Colleges and Universities-Excellence in Research (HBCU-EiR);
—Hispanic-Serving Institutions (HSI);
—Major Research Instrumentation (MRI);
—Partnerships for Research and Education in Materials (PREM);
—Louis Stokes Alliances for Minority Participation (LSAMP);
—Discovery Research PreK–12 (DRK–12);
—Graduate Research Fellowship Program (GRFP);
—Robert Noyce Teacher Scholarship Program (Noyce);
—NSF Scholarships in Science, Technology, Engineering and Mathematics (S–STEM); and
—CyberCorps®: Scholarship for Service (SFS).

NSF Direct Funding to All Categories of Minority-Serving Institutions: Fiscal Year 2010–Fiscal Year 2019

(Millions of Dollars)

Year	Funding to All Categories of Minority-Serving Institutions					Funding to All IHEs	MSIs as a Percent of IHE Funding
	EHR	MRE	R&RA	H–1B	Total		
Fiscal Year 2010	$116.2	$0	$127.4	$12.4	$255.9	$5,080.5	5.0%
Fiscal Year 2011	$121.5	$0	$147.3	$11.9	$280.7	$5,136.0	5.5%
Fiscal Year 2012	$115.8	$0	$131.8	$17.3	$265.0	$5,230.7	5.1%
Fiscal Year 2013	$125.6	$0	$138.6	$15.9	$280.1	$5,116.3	5.5%
Fiscal Year 2014	$124.8	$0	$187.0	$15.2	$327.0	$5,253.6	6.2%
Fiscal Year 2015	$131.5	$0	$192.3	$22.5	$346.2	$5,560.7	6.2%
Fiscal Year 2016	$152.1	$0	$314.0	$38.5	$504.6	$5,547.6	9.1%
Fiscal Year 2017	$124.7	$0	$275.4	$12.7	$412.8	$5,628.8	7.3%
Fiscal Year 2018	$210.7	$0	$507.0	$54.2	$771.9	$5,898.3	13.1%
Fiscal Year 2019	$219.0	$0	$544.0	$35.6	$798.6	$6,196.6	12.9%

COVID–19 IMPACT ON GENDER IN RESEARCH

Question 2. The COVID–19 pandemic has amplified deep challenges and inequities faced by researchers from underrepresented communities, putting our current and future research workforce in jeopardy. A National Academies of Sciences, Engineering, and Medicine report found that women researchers have disproportionately borne the brunt of the impacts of COVID–19, leading to disruptions in their research and a decline in authorship which can hurt long-term career prospects.

What measures has NSF taken to address the underrepresentation of women researchers, particularly women of color and those early in their career, and the toll COVID–19 has had on the careers of these researchers? And what can Congress do to help support these efforts?

Answer. The NSF is committed to increasing participation in the STEM enterprise, especially by groups that have been historically underrepresented in STEM fields. The NSB Vision 2030 document[29] highlighted a need for faster progress in increasing diversity in the STEM enterprise, including a call to double the number of women in the STEM workforce by 2030. NSF's program portfolio reflects targeted strategies to broaden participation, many which benefit researchers who are women or women of color. The program portfolio also supports activities directed specifically toward early career researchers.

NSF supports the advancement of women in their academic careers through several programs. One example is the NSF ADVANCE: Organizational Change for Gender Equity in STEM Academic Progressions program (NSF 20–554).[30] NSF ADVANCE emphasizes that individuals cannot be defined by a single identity or factor (e.g., gender), and projects now focus on multi-factors or identities (e.g., gender, race/ethnicity, et.al.) or intersectionality, as they address systemic change and gender equity work in academic environments. This emphasis has resulted in greater attention toward addressing issues for faculty women of color and faculty that are members of other marginalized groups.

The ADVANCE program hosted a panel in March 2021 entitled "Faculty Equity in a Time of COVID."[31] The focus of the panel discussion was on the short and long-term impacts of the COVID–19 pandemic on faculty diversity, equity, and inclusion, noting that the pandemic will likely have long lasting impacts on the educational and career progression of faculty, graduate students, and postdoctoral scholars.

There are additional NSF efforts that provide opportunities for women and early career researchers. Four NSF Directorates and one Office joined forces to issue a Dear Colleague Letter (*NSF 21–023*)[32] entitled "Broadening Participation in STEM Entrepreneurship and Innovation" that encourages investigators to develop comprehensive studies that use the intersectionality of identities as a framework to examine interventions and phenomena within the innovation and entrepreneurial space. The Directorate for Computer and Information Science and Engineering (CISE) is committed to broadening participation in computing (*BPC*). CISE strongly encourages meaningful actions that address the longstanding underrepresentation of various populations, including women, in computing and closely related disciplines. In July 2017, CISE began a pilot effort for broadening participation in computing. The BPC pilot encourages CISE Principal Investigators (PIs) to include meaningful Project BPC plans in proposals submitted to a subset of CISE's research programs and requires them at time of award. The Directorate for Mathematical and Physical Sciences (MPS) recently released a new solicitation (*NSF 21–570*)[33] entitled "Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (LEAPS–MPS). The goal of LEAPS–MPS program is to support MPS principal investigators initiating their research programs, especially those at minority-serving institutions (MSIs).

Many NSF programs support women researchers as Principal Investigators in a variety of projects. NSF also supports researchers early in their careers through additional programs and funding mechanisms. One example is the *CAREER* program,[34] which embodies NSF's commitment to encourage faculty and academic institutions to value and support the integration of research and education. Successful principal investigators propose creative, effective research and education plans, developed within the context of the mission, goals, and resources of their organizations, while building a firm foundation for a lifetime of contributions to research, education, and their integration. Other types of support include research initiation awards, pilot project support, faculty fellowship and professional development, and planning grants through different NSF programs.

In fiscal year 2020, the NSF RAPID award mechanism was used to support projects related to the impact of COVID–19, including projects directed to understanding the impact on researchers, such as "RAPID: Effect of The Coronavirus (COVID–19) Pandemic on the Psychosocial, Emotional, Academic and Career Functioning of Academic Communities" (*Award #2032386*)[35] and "RAPID: Impact of the Covid-19 Pandemic on the Biomedical Research Workforce: Productivity and

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[29] www.nsf.gov/nsb/publications/2020/nsb202015.pdf
[30] www.nsf.gov/pubs/2020/nsf20554/nsf20554.htm
[31] https://nsf.zoomgov.com/webinar/register/WN__Gf5S1V4PRJW5-m25N8tQpQ
[32] www.nsf.gov/pubs/2021/nsf21023/nsf21023.jsp
[33] www.nsf.gov/funding/pgm__summ.jsp?pims__id=505892
[34] www.nsf.gov/funding/pgm__summ.jsp?pims__id=503214
[35] www.nsf.gov/awardsearch/showAward?AWD__ID=2032386&HistoricalAwards=false

Progress in Academia" (*Award #2035112*).[36] Congress can add value by communicating these opportunities to their constituencies.

COVID–19 DRIVEN RESEARCH DELAYS

Question 3. Due to the COVID–19 pandemic, labs were shut down, and universities and other researchers have been significantly impacted—Johns Hopkins University in my State, the Nation's leader in Federal research funding for more than 40 years, estimates their research grants could see as much as $90 million in impacts from slowdowns related to the pandemic. Recognizing the need to ensure our Nation remains a world leader in innovation, have you identified a funding level necessary to recover from the research that is likely lost?

Answer. COVID–19 has indeed had a profound impact on the research community. Labs were closed, research campaigns were postponed, and access to equipment and personnel was limited or impossible. The funding requested in the fiscal year 2022 budget request for NSF and the American Jobs Plan would ensure that the nation remains a world leader in innovation and takes important steps to recover from the COVID–19 pandemic. In addition, the requested funding would preserve STEM research pathways for the current generation of students and vulnerable minorities. Examples of such costs include temporarily increasing the opportunities for postdoctoral, graduate and undergraduate research fellowships and stipends, enhancing investments in programs aimed at advancing diversity and inclusion in STEM, and restoring the operation and construction of NSF's major research facilities.

CLIMATE CHANGE AND ALTERNATIVE PROTEIN RESEARCH

Question 4. The President's 2022 discretionary request includes a significant increase to the NSF budget for climate-related science and emerging technologies. In 2019, agricultural activities contributed to more than 10 percent of our greenhouse gas emissions. While there are many options for addressing agricultural emissions, experts have pointed to developments in emerging field of alternative protein technologies, like plant-based and cultivated meat. I was glad to see that NSF made the first-ever U.S. Government grant for cultivated protein research last year. This is a good start, but much larger investments into alternative protein research seems warranted. Can you outline how NSF can increase research and innovation in this promising sector?

Answer. NSF is seeing an increase in the number of proposals and awards in the area of alternative proteins in many of our programs. Alternative proteins for food include the use of lignocellulose, mushrooms/fungi, bacteria and yeasts, and insects (for both human and animal/fish consumption). Cultivated meat production is the process of growing animal muscle, fat, and connective tissue cells, such as beef, chicken, pork, turkey or fish, in large-scale fermenters to produce a protein-rich meat product.

NSF has recently funded a project led by UC-Davis (2021132; PI: David Block) under the Growing Convergence Research) program (GCR; NSF 19–551)[37] to study the science, engineering, economics, sustainability, and consumer acceptance of cultivated meat production. The project goals are to establish the scientific and engineering foundation for the nascent cultivated meat industry, address critical scientific and engineering bottlenecks and knowledge gaps that inhibit commercialization, and train the scientists and engineers that will build the industry.

NSF has also supported a number of SBIR awards, including a recent SBIR Phase II award entitled, "Sustainable Alternative Protein Cultivation from Fungal Mycelium for Human Consumption (1926981). This research, which started as an I-Corps project (1661734), makes environmentally sustainable protein as synthetic "meat" from fungi and recently raised $28 million. Meati's process is highly efficient and sustainable, using 1 percent of the land, water, and energy compared to traditional animal meats.[38]

[36] www.nsf.gov/awardsearch/showAward?AWD_ID=2035112&HistoricalAwards=false
[37] www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=505637&ods_key=nsf19551
[38] www.foodnavigator-usa.com/Article/2020/10/30/Meati-Foods-raises-28m-to-expand-its-fungi-based-protein-platform

QUESTIONS SUBMITTED BY SENATOR LISA MURKOWSKI

NEW DIRECTORATE AND PARTNERSHIP WITH DOE

Question 1. In your written testimony, you highlighted President Biden's proposal in the American Jobs Plan to establish a new NSF directorate for technology, innovation, and partnerships. The Endless Frontier Act (EFA) would similarly restructure NSF to include a new technology directorate that would focus on 10 specific areas. It would also allocate NSF $100 billion over the next 5 years, a dramatic increase relative to NSF's fiscal year 2021 budget of just under $8.5 billion. The Department of Energy (DOE) already conducts basic or applied research and development (R&D) in all 10 of the EFA technology focus areas at its Office of Science or through its National Labs. I appreciated your emphasis during the hearing on the partnership between DOE and NSF on artificial intelligence, high-performance computing, and facilities, as well as your commitment to work closely with Secretary Granholm. How do you envision NSF"s increased R&D efforts in the EFA focus areas interacting with, but not duplicating, existing efforts at DOE? Do you believe that securing U.S. competitiveness requires that both NSF and DOE work on the development and commercialization of novel technologies in these fields?

Answer. We are currently facing a defining moment for the Nation. Global competition for leadership and talent in science, engineering and technology is at an all-time high. For the United States to remain the global leader, we must recommit to investing in people, fostering partnerships, and encouraging the innovative spirit that has been the source of our leadership over the past seven decades. Partnerships are a powerful way to leverage resources and deliver results.

As I noted at the hearing, NSF has a strong partnership with the Department of Energy (DOE) in quantum and high-performance computing that is helping to combat the current pandemic. We also partner in artificial intelligence and several other projects, but perhaps most importantly facilities—CERN in Switzerland, and the Rubin Observatory in Chile. NSF looks forward to strengthening all of these partnerships.

NSF pilots all technologies across a broad spectrum, and we have the expertise to facilitate the commercialization of these technologies through the I-Corps™ program, the SBIR/STTR program, innovation centers, as well as accelerators that need to be built as public/private partnerships, which can include DOE and other agencies. With respect to energy technologies in particular, NSF would actively seek to partner with DOE.

This is a time when all technologies need to be brought rapidly to market. It is exceedingly important to compete against our strongest competitors, like China. We need to unify ourselves to see how we can do so faster.

NEW DIRECTORATE AND ALASKAN UNIVERSITIES

Question 2. How do you envision Alaskan universities and research fitting into the proposed new directorate at NSF?

Answer. NSF envisions a new directorate that will support the creation of new local and regional innovation ecosystems capable of addressing local-level challenges, ranging from food and agriculture to transportation to healthcare delivery to equitable access to education. Alaskan universities would be quite competitive for such regional innovation accelerators, particularly when paired with local businesses and other investors. Not only will these activities result in new products and services contributing to economic growth and new jobs, but they will also serve to address some of the foremost challenges facing Alaskans today.

EXPANDING EPSCOR IN ALASKA

Question 3. Alaska universities and communities have greatly benefited from the NSF Established Program to Stimulate Competitive Research (EPSCoR). I am grateful for NSF's commitment to build capacity and support research and researchers in States like mine that receive limited Federal R&D funding. How can we build out and expand EPSCoR in Alaska?

Answer. The fiscal year 2022 request for EPSCoR is $239.62 million, a 19.8 percent increase over the fiscal year 2021 Current Plan, commensurate with the change in total NSF funding.

Over the past 5 years, Alaska has been awarded approximately $250 million in total from NSF. The NSF EPSCoR program has been instrumental in catalyzing the engagement of Alaska's researchers and educators in NSF programs; however, additional actions that could continue to contribute to Alaska's progress include:

—Researchers should actively peruse the NSF website for information on NSF strategic priorities and funding opportunities.
—NSF EPSCoR routinely disseminates information of funding opportunities to the EPSCoR community via the State's project director and/or webinars. Individuals should take full advantage of these items.
—In fiscal year 2020, approximately 160 proposals were submitted to NSF from Alaska; with a success rate of approximately 40 percent well above the approximately 28 percent for NSF overall.
—Proposers are strongly encouraged to review the feedback on declined actions and revise and resubmit to future competitions. In addition, serving on merit review panels provides insight on what constitutes a meritorious proposal and this could be useful as future proposals are developed by individuals from Alaska.
—Institutions and individuals should take advantage of NSF EPSCoR's outreach mechanism, which supports outreach travel that enables NSF staff to directly engage and inform the EPSCoR research community about NSF opportunities, priorities, programs, and policies.
—Individuals should not hesitate to reach out to NSF program officers to obtain further clarification of program solicitations and/or funding opportunities.
—Institutions and investigators in Alaska are encouraged to establish new and expand existing partnerships to engages with partners in multiple sectors within and beyond Alaska's borders (i.e., State and local governments, private industry, non-profits, and 2-year and 4-year institutions of higher education). Partnerships with underserved and underrepresented communities will further leverage Alaska's resources. A diverse network of partnerships will deliver results, and access a broader network of ideas, innovations, and experiences to solve problems facing Alaska and the Nation overall.

Following through on these items as well as other items locally to strengthen sponsored research offices at institutions across Alaska could expand EPSCoR within the State as well as lead to an increased participation in NSF opportunities.

USE-INSPIRED RESEARCH AND INCLUSION OF NATIVE VOICES AND PERSPECTIVES

Question 4. In your written testimony, you emphasized the importance of use-inspired research and "collaborations spanning diverse institutions, sectors and geographies to co-create new technologies and solutions" in maximizing American competitiveness and addressing some of our greatest challenges. Will you commit to better including indigenous voices and perspectives, including those of Alaska Natives, in this co-creation of knowledge and the proposal evaluation process, especially on issues related to climate and Arctic change?

Answer. For NSF to fulfil its mission of advancing science for the prosperity of the Nation, diverse perspectives must be engaged both in the creation of knowledge and the evaluation of proposals. The review process identifies innovative and transformative ideas; to accomplish this goal individuals who bring different expertise and experiences must be engaged in the evaluation of projects, including indigenous voices. As NSF continues to make the research enterprise more inclusive, funding opportunities explicitly ask for perspectives from communities directly impacted by environmental change to be part of project design. NSF is committed to strengthening the science and engineering community, and that can only be accomplished by engaging diverse voices in the creation of knowledge and the review process. NSF is developing an action plan for respectful and meaningful consultation strengthening the nation-to-nation relationships with federally recognized Tribal nations. In addition, NSF recognizes the importance of including Indigenous people in its research efforts and has a range of programs, initiatives, external collaborations, and other resources that aim to facilitate effective and respectful engagement with Indigenous peoples.

NSF USARRAY TRANSPORTABLE ARRAY TRANSFER TO NATIONAL MESONET PROGRAM (NMP)

Question 5. In 2019–2020, the University of Alaska Fairbanks (UAF) acquired nearly 100 real-time seismic and weather stations installed across Alaska as part of the NSF USArray Transportable Array. This network provides crucial seismic and atmospheric data to the U.S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense, and other agencies. With USGS support, the Alaska Earthquake Center assumed the management of 43 USArray stations in southern Alaska, but the fate of the remaining stations in the State is still unclear. In fiscal year 2021, UAF joined the National

Weather Service's National Mesonet Program (NMP) with the goal of incorporating 70 of the remaining stations (mostly in northern and western Alaska) into the NMP and supplementing their weather and atmospheric monitoring capabilities. Should this incorporation take place, can you commit to coordinating with NOAA to transfer operational responsibility for these stations to the NMP?

Answer. NSF has operated the Alaska Transportable Array (ATA) 2 years longer than initially planned to maximize the number of stations adopted by external groups for continued operation. NSF constructed 194 stations as part of the ATA and through collaborations with Federal and Alaskan stakeholders, 112 stations (60 percent) have been adopted. University of Alaska Fairbanks (UAF) adopted 96 of these stations. Most these stations also host meteorological equipment, which provides data to the new UAF Mesonet Array. This data enables critical observations of weather, wildfires, and permafrost. In 2020, the NSF Office of Polar Programs provided nearly $9 million in funding to UAF to support operation of the 45 stations in northern and western Alaska. These stations were identified by UAF as high priority for maintaining high station density and cost efficiency. In total, NSF has transitioned 139 state-of-the-art scientific observing platforms that will continue to provide observations of weather, earthquakes, volcanos, tsunamis, and landslides in Alaska. The remaining 80 stations that UAF and other stakeholders have elected not to adopt will be removed throughout the summer of 2021.

NEW LANDSLIDE WARNING SYSTEM (LWS) AND RESEARCH

Question 6. I would like to thank NSF for providing the grant funding behind Alaska's first landslide warning system (LWS) through the Smart & Connected Communities program. After more than 60 landslides occurred in and around Sitka in August 2015—resulting in three deaths and extensive damage to infrastructure—Sitka residents partnered with the Sitka Sound Science Center, the Sitka Tribe of Alaska, several State and Federal agencies, two universities, and the RAND Corporation to obtain NSF funding to develop the LWS. In this project, both trained geoscientists and community members collect a range of geological and meteorological measurements to assess landslide risk and inform citizen and community decisionmaking. How can we adapt this effort to create LWSs for other vulnerable communities and areas in Alaska such as Haines, Whittier, and the Prince William Sound, as well as other parts of the U.S. with significant landslide risk? More broadly, do you support the authorization of programs at NSF and other agencies to enable research on the causes, risks, and possible prediction of landslides?

Answer. The adaptation effort for the Landslide Warning System to other communities in Alaska could be an implementation project, which may fall outside of NSF's mission to support basic scientific research. To the broader question, NSF is supportive of programs that research the causes, risks and prediction of landslides. Several programs in ENG and GEO and the Big Idea Navigating the New Arctic have active or previously funded awards addressing these issues.

SUBCOMMITTEE RECESS

Hearing is adjourned.

[Whereupon, at 3:45 p.m., Tuesday, April 13, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

WEDNESDAY, APRIL 28, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:30 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chairwoman) presiding.

Present: Senators Shaheen, Van Hollen, Moran, Murkowski, Hagerty, Collins, and Braun.

OFFICE OF THE U.S. TRADE REPRESENTATIVE

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. Good morning, everyone. Welcome to today's Commerce, Justice and Science and Related Agencies Subcommittee Hearing to review the activities and fiscal year 2022 funding priorities of the Office of the U.S. Trade Representative.

We're especially pleased today to have Ambassador Katherine Tai with us, our United States Trade Representative. I look forward to hearing what you have to say and to hearing the questions that we have. So, welcome. Congratulations on your historic nomination and unanimous confirmation. I know that I speak for everyone on the subcommittee when I say that we're excited to have you testify on the topics of importance to the country and to all of our constituents.

The Office of U.S. Trade Representative is responsible for developing and coordinating U.S. international trade, commodity, and direct investment policy, and overseeing negotiations with other countries. And I think it's no exaggeration to say that these responsibilities affect every American in every facet of our lives, from protecting American workers, helping American businesses thrive, and enhancing national security, to building a world with clean air and water, while preventing catastrophic climate change.

In order for USTR to succeed, Congress and, in particular, this subcommittee, must ensure it has sufficient resources to carry out its important mission. And to that end, the fiscal year 2021 Omnibus Spending Bill included $70 million for the Office of USTR. While the President's initial fiscal year 2022 request did not include a top line proposal for USTR, we look forward to learning more today about your funding requests.

And while we consider these funding needs, it's important to consider the new administration's trade policies and strategy. In 2018 and 2019, the previous administration imposed a series of wide-ranging import tariffs the likes of which this country has not seen in years.

The repeated use of tariffs, the crudest form of trade instruments, and the predictable tit-for-tat retaliatory tariffs that followed wreaked havoc on global supply chains, and, by extension, on too many businesses and working people in my State of New Hampshire, and throughout the country.

New Hampshire's a small business State, but it's also an exporting State. And in a previous life as Governor of the Granite State, I personally led the first overseas trade mission to Europe, and that was followed by several others to bring more investment into the State and to help businesses tap into new export markets. People in my State understand what's at stake in trade negotiations.

One small business I've heard from is Walkin' Pets, a 35-person pet supply company in Amherst, New Hampshire. The company signature product, a wheelchair for dogs, is produced in China, and is subject to tariffs. Now, the company believed that the tariff was a mistake on its business, so they retained a lawyer to help navigate the Byzantine exclusion process. Unfortunately, the company wasn't able to get an exclusion because of an imprecise classification.

Now, after hiring a lawyer, and having braved the exclusion process, the company is still at square one, stuck with the tariff, and struggling to stay afloat.

So, understandably, there is still a great deal of concern about the Section 301 tariffs especially now that, as of the end of calendar year, exclusions are no longer an option. I'm eager to learn more about your plans for Section 301 tariffs, and I'm pleased that in your confirmation hearing, you committed to further engagement of reunilateral action. You also committed to using all the tools at your disposal, not just more and more tariffs, to advance USTR's critical mission.

In my view, taking a tough, but more thoughtful, approach will help level the playing field for American workers, while allowing the United States to once again set the rules of the road for global trade. Your successful negotiation of USMCA is proof positive that this is a winning playbook. Trade done right is a race to the top instead of a race to the bottom, as you know.

Finally, let me conclude my opening statement by noting that I was very pleased that you used your first major policy address to embrace USTR's critical role in protecting our environment and addressing climate change. Trade policy, in my view, can't be divorced from environmental policy as our future prosperity is tied to tackling climate change.

Ambassador Tai, we clearly have a lot to discuss this morning. I look forward to hearing your testimony, and the opportunity to engage with you and your thoughts about what we should be doing with respect to trade.

So, thank you again for being here, and now I'd like to turn it over to my Ranking Member, Senator Moran, from Kansas, for his opening remarks. Senator.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Senator Shaheen, thank you very much for convening this hearing. Ambassador Tai, welcome and congratulations on your unanimous confirmation. I always wondered if I was nominated for something whether I could get my colleagues in total to vote for me, and I doubt that's the case, so congratulations. It's a significant accomplishment in this environment. And I certainly appreciate you being here. Thank you for the moment that we had to visit in the hallway.

You're stepping into your role at USTR at a time in which trade policy and trade enforcement has arguably never been more important, and perhaps more challenging. The Trump administration pursued and effectuated an aggressive and sometimes untraditional trade strategy, and it now falls to you and others in the Biden administration to carry our trade policies forward.

Due to their importance to my home State of Kansas, I'm very interested in USMCA, and the Phase One China Trade Deal. I always remind myself and my constituents that Kansas is dependent upon our exports, and our economic future rests with feeding and supplying the rest of the world. Trade and exports is how many Kansans make a living, and Mexico, Canada, China, and many other countries are very important to us, but those three are consistently at the top of our list.

That's why I believe it's so important for us to ensure that these trading partners live up to their commitments codified in USMCA and in the Phase One Deal. This is the first USTR-specific hearing this subcommittee has held since these trade agreements were entered into, and I'm eager to receive an update from you about current compliance with those agreements.

Ambassador, you're also inheriting the responsibility, as Senator Shaheen said, of managing a full suite of 301—Section 301 investigations, including ongoing investigations into digital services, taxes, and overseeing active tariffs targeting billions of product. That is a significant challenge but a very important one for the outcome to our Kansas manufacturers and American manufacturers. In today's environment, a most common conversation I have with Kansans is about the expense of buying a home, and the expense of building a home, and the lack of supply chain in regard to lumber and steel.

While those trade agreements are important, and tariffs Section 301 is a huge issue for you, I remain concerned about the harm that tariffs have caused to U.S. families, to businesses, farmers, manufacturers, and workers. This concern is what caused this subcommittee on a bipartisan basis to require—we did this during fiscal year 2019 Appropriations Bill—that USTR execute an exclusion process for all rounds of Section 301 China tariffs.

I don't think that was a necessary expected outcome when the tariffs were put in place, but this subcommittee, in doing its work, insisted on an exclusion process, and we've lived with that exclusion process, its ups and downs, ever since. We continue to carry that requirement in all subsequent CGS appropriation bills, and I will continue to ensure that this direction is carried out as long as the China tariffs remain in place.

I also believe that USTR ought to begin a process to consider renewing expired exclusions and restart the process for companies to apply for those exclusions. Ambassador Tai, you've already heard from me on this matter via a letter, and I look forward to working with you to ensure that businesses have continued opportunities to petition their government for relief from tariffs.

In addition to the many legacy responsibilities that I've highlighted, I'm mindful that the Biden administration has also developed in its early stages of—and is in its early stages of pursuing its own trade strategies. As we consider USTR's funding needs for fiscal year 2022 during this hearing today, I'm looking forward to learning more about President Biden's trade strategies and priorities, and also a better understanding of what level of resources USTR requires to perform its growing responsibilities.

To this end, Ambassador, I was surprised that the administration's, quote, "skinny budget" released on April 9 contained no information about fiscal year 2022 request for USTR. I hope this omission is nothing more than a result of this year's budget development process, and not a reflection upon any suggestion that trade policy is going to take a back seat to other domestic administration priorities.

USTR's mission and its pursuit of free and fair trade opportunities for U.S. businesses is a domestic priority, and I hope that the Biden administration continues to view it as such.

Ambassador, I thank you for joining us this morning. I look forward to hearing your testimony today, and I, even more importantly, look forward to working with you in a very solid and, hopefully, valuable way for both of us for years to come. Thank you very much.

Senator SHAHEEN. Go ahead, Ambassador.

STATEMENT OF HON. KATHERINE TAI, AMBASSADOR, U.S. TRADE REPRESENTATIVE

Ms. TAI. Thank you, Chairwoman Shaheen, Ranking Member Moran, and Members of the subcommittee for inviting me to testify before you today. It is a great honor to be here, just as it is a great honor to return to USTR and lead the dedicated public servants who carry out this agency's important mission on behalf of the American people.

We are working hard to support the Biden-Harris administration's efforts to end the pandemic and recover from the economic crisis. The American Rescue Plan, passed by Congress, has already helped get shots in arms and money in the pockets of millions of Americans.

While we're seeing the economic benefits of that quick action, more needs to be done. Our goal is not a return to the economy we had before the pandemic, but to seize this opportunity to set America on a strong and clear path to a competitive future. That's why President Biden proposed the American Jobs Plan that would make bold investments and build a better foundation for decades of economic growth and good-paying jobs for this generation of Americans and future generations.

This is why USTR is developing and implementing what we are calling a worker-centered trade policy that complements and sup-

ports the domestic investments in the American Jobs Plan. The President's trade agenda will foster broad-based, equitable growth that increases innovation and enhances this country's competitive edge and—that's crafted with workers at the table.

For the first time, we committed to using trade policy to address racial equity and to support underserved communities. Through thoughtful, sustained engagement and utilizing hard data, the Biden administration will develop a better understanding of how proposed trade policies affect all Americans as people and in their communities, especially communities of color. And we will consider those impacts as we make our policy decisions.

As part of our whole of government approach, I recently outlined my vision for leveraging trade tools, and how USTR will enthusiastically embrace our responsibility to create opportunities to lead in creating new clean-energy technologies and new jobs, while averting an unfolding economic crisis and protecting our planet. We will meet this moment by working collaboratively with our trading partners, with Congress, underrepresented communities, and other key stakeholders to find creative solutions that create good-paying jobs and incentivize that race to the top.

In my first conversations with my foreign counterparts, I have made clear that the United States will rebuild our international alliances and partnerships while reengaging global institutions.

In just a few short months, USTR has already delivered results for American workers. In March, USTR announced a 4-month suspension of tariffs with both the United Kingdom and the European Union related to our long-running WTO dispute over certain large civil aircraft subsidies. This was a bold step towards finally resolving the issues that have impacted the U.S. industry and its workers.

Earlier this month, USTR helped to resolve a significant dispute between two South Korean companies that make electric vehicle batteries in America. This settlement builds confidence in these companies' reliability and responsibility as suppliers to the U.S. auto industry, and it puts our country in a stronger position to drive innovation and growth of clean energy technology envisioned in the American Jobs Plan. The settlement is the type of trade policy that I believe we need. It supports a larger strategy for creating jobs and investing in innovation and manufacturing leadership by bolstering sustainable renewable energy supply chains, levelling the playing field, and discouraging regulatory arbitrage.

As we continue to pursue the President's trade agenda, we will promote and defend our values of democracy, human rights, and economic opportunity in service of producing a more inclusive prosperity. USTR will be directly involved in assembling what the President has termed a united front of U.S. allies, and I will carry the strength and creativity of this agency into every room that I enter.

I want to close by thanking the talented public servants at USTR for their sacrifice and professionalism during this unprecedented time. They have been tested in ways that we could not have imagined, but they have continued to rise to the occasion with determination and integrity. I am so proud to represent them here today

and appreciate the robust support of this subcommittee. Thank you, and I look forward to answering your questions.

[The statement follows:]

PREPARED STATEMENT OF HON. KATHERINE TAI, AMBASSADOR, U.S. TRADE REPRESENTATIVE

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Conclusion

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with determination and integrity. I am proud to represent them today and appreciate the robust support of this committee.

Thank you, and I look forward to answering your questions.

Senator SHAHEEN. Thank you very much. I just want to, at the start, remind everyone that this is a hybrid hearing and that some of our colleagues may be joining remotely. So we're going to do our best to try and keep people informed of the order of questioning, but, as we know, that doesn't always go the way we hope. So, that's just a warning that—I'm going to ask Senator Moran to go first. He has a mark-up and another committee in a few minutes, and I know he wanted to ask some questions before he has to leave. So, Senator Moran.

Senator MORAN. Ambassador—Chairman, thank you for your courtesies. And Ambassador, I will return. I hope the mark-up of two bills of mine is non-controversial, and I'll be back shortly, because I do want to hear what you say in response to other Members' questions.

Let me start with something you mentioned in your opening statement. I applaud you, Ambassador, for the goal of resolving the number of long-running trade disputes. Kansas is an aviation State. Those large aircraft—civil aircraft manufacturers call Kansas home, and we are very encouraged by the announcement that the tariffs related to WTO's dispute would be paused for a period of 4 months in order to create space for a negotiated settlement. We're about a month into that pause. Can you provide me with an update of the status of those discussions and the likelihood that an agreement would be reached during that 4-month period?

Ms. TAI. I would love to engage with you on this question, Senator Moran. We are about a month into the 4-month period. I am very serious when I say that it is time for us to resolve these disputes. They've been going on for 16 years, and as you know, these disputes aren't born on the day that we file them. They come out of a couple years of incubation, as well, so, these are 20-year-old disputes.

They're disputes between the United States and the European Union. We're both strong manufacturers in this industry, and we're both facing increasing competition from other parts of the world. We need to figure out how to resolve our differences in order for us to come together to meet the challenges that we have today, and that we will have tomorrow. And so, I am very committed, USTR is committed to making the most of this 4-month period to close out a chapter of our relationship and our tensions with the European Union.

I have been in touch with my counterparts in both the United Kingdom and the European Union. Our teams are in touch. I am, at this point, very motivated and hopeful that we will get the traction that we need with our trading partners, and very much hope that they see this opportunity as I do, as one that we really need to seize to prove to ourselves and to the rest of the world that we can move on because we have to.

Senator MORAN. I'll take that answer as you are working hard to accomplish that goal, and you are hopeful to achieve that during that 4-month period. I wish you well.

Ambassador, I don't know of any score card that's out there in regard to China's compliance with Phase One. How would you rate or grade the Phase One Agreement compliance? What has happened and what hasn't happened?

Ms. TAI. Well, that's a very important question, and one that I know there's a lot of interest up here in the Senate, in the House, on the Hill, in general with stakeholders in our entire economy, and certainly one of the questions that is at the forefront of my mind coming in as U.S. Trade Representative.

I would like to just take a step back and look at the contours of this U.S.-China trade and economic agreement. It has a number of parts. There's a lot of focus on the purchase commitments that China made as part of this agreement. There are also a set of rules related to intellectual property, financial services, services access, biotech approvals that China also committed to, and we are drilling down at USTR using the usual discipline that we have to look at the overall compliance picture, and to examine China's performance under this agreement in all of its component parts.

What I would share with you right now, Senator Moran, because we are still in the middle of this review, is that the picture is more nuanced than you might think by just looking at the trade data. And so, I look forward to coming back to you with a better picture, and with a more clear sense for where we need to drive harder with our Chinese counterpart.

Senator MORAN. I think that's a fair answer for this point in your tenure at USTR, So, thank you. At least you know the importance it has, and it's good for you to remind me of not just the agricultural commodity purchases, which are hugely important to Kansas, but also those trade and intellectual aspects of the agreement as well.

In the 30 seconds I have left, let me see if I can get an additional question in. Steel and lumber prices, they're at record highs. The Biden administration is proposing infrastructure investments. I assume that will increase the demand for those items. I'm thinking about the absence of softwood lumber agreement with Canada, and the associated tariffs, as well as the Section 232 tariffs on steel and aluminum. Where do negotiations stand with Canada on softwood lumber, and what's the administration further considering to do to increase the affordability of two very important components to infrastructure and housing?

Ms. TAI. Well, on softwood lumber, let me say this. I think that it will always be a component of the conversation between the U.S. Trade Representative and her or his Canadian counterpart. In my initial conversation with my Canadian counterpart, Minister Ng of Canada, we did raise our bilateral issues, the longstanding ones especially. They're ones that require maintenance and care and attention. So, what I would say to you, Senator Moran, is softwood lumber will always be in my sights in the conversation with Canada.

We have a lot of tools. We have traditionally used them robustly. I intend to continue to do so, and to continue to raise the concerns that we have. And try to engage our Canadian counterparts in some out-of-the-box thinking, on this issue and others, in terms of

how we manage longstanding differences that we have that really make an economic impact for our stakeholders and our economy.

The other question that you've asked is on the steel tariffs in particular. What I would say here is that we continue to have a global overcapacity problem that is distorting the international market. But what we have right now in the Biden administration is a team of people who are intent on looking for solutions that come through cooperation with our close partners and allies. So, on that, what I'd like to convey to you is I and others in the administration, including Secretary Raimondo at Commerce, are working hard on conversations with the Europeans in particular to examine how we address the problems that the 232 tariffs have raised in particular in our relationships, while keeping our eye on the overall steel and aluminum market problems that we really need others' help to address.

Senator MORAN. I wish you well, and I look forward to working with you.

Ms. TAI. Thank you.

Senator SHAHEEN. Thank you, Senator Moran. Hopefully, you'll be able to get back to join us. I should have announced when I pointed out this is a hybrid hearing that we will therefore take Members in order of seniority on the subcommittee so that—since we don't know who will have shown up first online.

I want to follow up with Senator Moran's question about the Phase One Trade Deal with China, because I understand that the deal included the creation of Bilateral Evaluation and Dispute Resolution Office. Is that office up and running, and can you describe to us how you expect that to work?

Ms. TAI. Well, thank you for the question, Senator Shaheen. I think the office is not a—it's a—I think it stands for a flow——

Senator SHAHEEN. A process, maybe?

Ms. TAI. Organization of process, thank you. Looking for that word. And so, we have had continued contact at the designated official's level to continue to push and examine performance of this agreement. Right now, we are looking at the agreement holistically through the lens of an overall China strategy.

And so, what I would say to you right now is we are looking at the tools that we have across the board, in particular in this agreement. It is a tool that looks a little bit different from our other agreements or traditional agreements, but we're interested, as I will always say, open-minded and interested in out-of-the-box and new tools.

So, I feel like the bottom line here. We are very focused on this agreement, which is the agreement that we have, and testing its utility, and maximizing our use of the tools that are included in this agreement.

Senator SHAHEEN. So, once that process is up and running, do we expect companies and individuals to be able to actually make use of that process when they have a concern or dispute that they want to get negotiated?

Ms. TAI. So, I would say that one of USTR's functions is to be open to, and we traditionally have been very open to the engagement with the public, with our stakeholders. Increasingly, we are trying to expand out the circle of stakeholders who are used to

interacting with USTR. So, absolutely, our stakeholders are part of that process.

Senator SHAHEEN. Right. And I understand that the Phase One Agreement also included a provision for USTR to meet every 6 months with the Chinese Vice Premier. Is that—that meeting's a little overdue. Has that been scheduled?

Ms. TAI. It has not yet been scheduled, Senator Shaheen. I will be having my first contact with my Chinese counterpart, which I'm looking forward to, at the right time, and I expect to be able to come back to you with an update in the near term.

Senator SHAHEEN. Great, thank you. I want to go back to the 301 tariffs on imported goods because, as I said, that has been a real concern that I've heard from New Hampshire businesses. So, can you give us any sense of how the administration is going to approach the existing section in the near term, and what your view is about how to use that authority?

Ms. TAI. Senator Shaheen, I know very directly, and I know this as a strong fact, that the tariffs and the exclusion process really do touch a very wide swath of our economy, our businesses, both large and small. So, this is very much on my mind. At my confirmation hearing, Senator Portman asked me for a commitment which I was very ready to make. To undertake a top to bottom review on China, at USTR in particular. And he recommended it as something that he had done in his time as U.S. Trade Representative.

So, the tariffs, this agreement, the exclusion process will be very critical parts of this top-to-bottom review, and I am looking forward to kicking it off and being able to come back to you with a thoughtful and strategic recommendation in terms of how we will proceed from there.

Senator SHAHEEN. Well, thank you. Do you have any sense of how long this is going to take, your review?

Ms. TAI. It is something that we are looking at in our design right now, and I do know that time is of the essence.

Senator SHAHEEN. Okay, thank you. Well, and then, just to follow up a little bit on the exclusion process, which, as you know, has been very opaque. It's been challenging for companies to figure out. How do you expect to—will the review include that exclusion process, as well?

Ms. TAI. Yes, it will.

Senator SHAHEEN. Thank you. Let me now go to Senator Murkowski.

Senator MURKOWSKI. Ambassador, thank you. Appreciate it. You need to know that you were the subject of conversation in Kodiak, Alaska, this weekend. Everyone is pinning their hopes on our trade representative when it comes to seafood issues.

So, I want to raise that with you. As you know, we've seen some good news for U.S. agriculture commodities, corn and soybeans, under the Phase One Agreement, but when it comes to seafood, the fact of the matter is China is not meeting those commitments.

In 2020, its imports of U.S. seafood were below the 2017 baseline, and yet at the same time, what we're seeing is that China is increasing their imports from other areas. Non-U.S. imports up 89

percent in 2019 compared to the 2017 baseline. Still up by 35 percent in 2020, despite the pandemic.

So, the question that the fine folks in Kodiak had is, what's going on? Basically, what is happening? Why do we continue to see this shortfall by China in terms of its seafood purchases? Does USTR recognize what this is doing to our U.S. seafood competitiveness, and more importantly, how can we hold China accountable for failing on its commitments? And so, if you can please address this for me and for all these fishermen in Kodiak that are quite anxious about what we've seen.

Ms. TAI. Senator Murkowski, thank you. I have been advised and informed of the excellence of the seafood product that is a hallmark of Alaska. I don't know that I've ever had the opportunity to experience the full aspects of what Alaska has to offer, but the reputation of Alaska's seafood precedes it, really. And——

Senator MURKOWSKI. You are invited, by the way, to come north.

Ms. TAI. Thank you very much. I was definitely maybe a little bit fishing for that invitation. But——

[Laughter.]

Senator MURKOWSKI. We will accommodate.

Ms. TAI. The seafood is certainly in our sights in terms of the commitments that the Chinese made in this agreement. They're really, really important for a number of reasons. Economically, they're important to us, but they're also important as commitments that China undertook of its own free will to make, and that we need to ensure that their promises are worth the paper that they are written on.

So, let me just assure you and the fishermen in Kodiak, I hear you loud and clear. And in our engagement with China on this particular agreement, we will need to engage with China across the board in our trade and economic relationship, but this is the agreement that we have, and this is the agreement that needs to stand up. So, please let your fishermen know that I care deeply about their livelihoods, about the integrity of this agreement, and that we will be making use of the tools that we have and really pushing the tools that we have on their—for their benefit.

Senator MURKOWSKI. Well, I appreciate that, and I'm probably not going to need to report back to them because they're probably watching this hearing, even though it's just 6 o'clock in the morning. So, I appreciate that commitment, but again, you have pointed out this was part of their deal. They've seen fit to make better on their word when it comes to other products, but seafood is a glaring example of where they have failed. So, if we can just be aggressive in that area.

Another area, in addition to our seafood, that has seen impacts because of tariffs is what we have seen with regards to some of our timber products. This is a part of the State that has seen particular devastation as a result of drop-off in tourism traffic, so the economy in southeast is really depressed right now. But they're also seeing the impacts of a 25 percent tariff rate on Alaska spruce and hemlock. And under the Phase One Agreement, there was a waiver for the timber tariffs, but Alaska spruce exports to China, which is our primary buyer of spruce, flatlined over the past couple years,

and the future is not very good. So, hoping that you can help us work through these tariff issues, as well, on the timber export side.

Ms. TAI. Absolutely. I hear you loud and clear on the timber, as well.

Senator MURKOWSKI. Thank you. Thank you, Madam Chairman.

Senator SHAHEEN. Thank you. I believe we have Senator Van Hollen on the line.

Senator VAN HOLLEN. Yes, thank you, Madam Chairman, and thank you, Madam Ambassador for your leadership. I have some questions on the solar panel tariffs that were imposed by the Trump administration. Back in 2018, they imposed tariff rates on the import of solar cells and modules, under Section 201. That was in addition to the preexisting duties that applied to these products. The tariff was set at over 30 percent, and then declined by 5 percent over the years.

In 2020, so just last year, the Trump administration moved to increase the 2021 tariff from 15 percent, which it had come down to, to 18 percent. That's what it is today. These tariffs have hit workers in Maryland hard, especially in the clean energy industry, costing us many jobs. People laid off because solar panel installers were no longer able to do it at a competitive price, and nationally, according to the Solar Energy Industries Association, these Trump tariffs have cost 62,000 American job opportunities.

The Biden administration, as I understand it, you've said is going to be reviewing these tariffs. This one is scheduled to expire in February of next year, and I listened carefully to the President's statement about jobs and clean energy jobs here in the United States. Have you heard and looked at the reports of how those solar panel tariffs have hurt jobs here in the United States?

Ms. TAI. Thank you, Senator Van Hollen. The issue of the solar tariffs are very much on my mind, both in terms of the impacts and the dilemmas that they present to our economy right now, and the different stakeholders in our economy specific to the solar tariffs, the role that solar panels play in a future where we are running cleaner energy, but also for me, the story of the solar panel industry in the United States really gets at a fundamental issue that we need to confront in our competition with China.

First thing that I'd like to say is Section 201 is—and this particular Section 201 set of tariffs, were sought by an industry here in the United States, so that there are producers who petitioned for relief from the United States Government. And today, we have a sole producer left in the United States for solar panels, when 10, 12 years ago, we had quite a few in this burgeoning industry. Given the role that we think these types of products are going to play, it's actually a very sad story that we are in right now, where we are struggling with the application of these tariffs that are meant to save maybe the last producer that we have here in the United States.

And so, stepping aside a little bit, what I would say is that I recognize the nuance and the complexity that is presented by the solar tariffs question in particular. I do want to raise the profile of the overall, bigger picture so that we don't lose it, which is if we don't keep our eye on the ball, we will continue to experience these types

of fights over the last scraps of an industry that we have lost to a competitor, and in particular to the Chinese.

It is a pattern that we see over and over again. I will say that steel and aluminum are a leading contender here, solar. And we can see where this pattern will play out again and again if we are not ready to anticipate the loss of industries to anti-competitive practices and massive subsidies that are coming from our biggest competitors.

Senator VAN HOLLEN. Right. Madam Ambassador, I appreciate that, and you know, my time is running out. I—we all—I strongly support the American Jobs Bill, and we need to be investing a lot more in developing these capabilities here at home, but that should not come right now at the cost of thousands and thousands of jobs in Maryland and other places with respect to installing solar panels. We should be able to do two things at one time. You know, the president has talked about his clean energy goals. These tariffs have resulted in the equivalent of seven coal plants, or five point five million automobiles being put back on the road because of the fact that the solar panel installation industry was made less competitive here at home.

So, we have big issues that you mentioned, in terms of our own domestic capacity, but we should not do one at the cost of the other. We need to make those investments here at home, but not be harming those who are trying to make people's homes more efficient.

So, Madam Chairman, I see the time is up. I am going to submit some questions for the record with regard to the enforcement of the USMCA, and I look forward to your responses in writing. Thank you, Madam Ambassador. Thank you, Madam Chairman.

Senator SHAHEEN. Thank you, Senator Van Hollen. Senator Collins.

Senator COLLINS. Thank you, Madam Chairman. Ambassador, welcome. The Maine lobster industry has been hard hit by the 25 percent retaliatory tariff that China imposed on the U.S. lobster industry in 2018. The Phase One Trade Agreement between the U.S. and China was a first step toward regaining Chinese market share, and indeed inspected growth—expected growth in that market share. Before the tariff, China was the second largest importer of U.S. lobster, purchasing $128 million worth in 2017. During the first month under the new tariffs, however, live lobster exports to China declined by 64 percent, and indeed, one lobster exporter in Maine saw a 90 percent decrease in exports to China.

Your predecessor made real progress by securing a commitment from the Chinese to match or exceed their pre-tariff purchase levels. And at first, there really was progress under the agreement. We saw sales to China start going up. But now that's not carried through into this year, into 2021. And currently, the totals are nowhere near the promised purchase levels or the pre-tariff levels.

What steps is the administration planning to take to ensure that China lives up to its promise and its purchase agreements that it made in the Phase One Agreement?

Ms. TAI. Senator Collins, thank you for that. The lobster exports from Maine and from the United States are very much at top of mind given the strength of our industry in our ability to supply

other markets. And I'm very aware of the story of the hit to our exports, and then the hope and the promise that the Chinese have made.

What I would say to you is that, with respect to the purchase commitments that the Chinese made in the U.S.-China Trade Agreement, we are in the process of examining their performance, and are scrutinizing all of the aspects of what they have done, and what they have yet to do, and what they have not done at the levels that they promised.

Your raising it with me here today is one of the most powerful ways of showing how much of a priority these promises and China's ability to keep them are to us in managing our relationship with China. So, I would like to assure you that this is going to be—is a priority as we are examining performance and will be a priority for us as we examine our options for engagement with China and all of our enforcement options.

Senator COLLINS. Thank you. As a result of the worldwide Section 232 steel and aluminum tariffs, which my colleagues have all mentioned today, the European Union is said to double retaliatory tariffs to 50 percent on certain imported products, including recreational boats, on June 1st. This would have an adverse impact on boat builders in the State of Maine. Is the administration working with the UE to prevent this increase from taking place?

Ms. TAI. Senator Collins, yes, across the board on Section 232, this administration is committed to working on the larger issue of the global overcapacity and glut in steel and aluminum production capacity, but with our allies, in particular, with the European Union. So, we are engaging with our European Union counterparts that is from my perspective and also, I know Secretary Raimondo at the Commerce Department. And the point, I think, is that we find ways to work together with allies like the European Union on an overall problem that we actually share. So, yes, my bottom line answer is yes, we are working on this.

Senator COLLINS. Thank you. And I only have 5 seconds left, so I will submit my rest of my questions for the record. But let me just say that I agree with my colleagues on the need for there to be a negotiation with Canada to renew the softwood lumber agreement. We've seen lumber prices go sky high. We obviously prefer domestic sources, but when domestic sources can't meet the demand, as is the case right now, and prices are so high, we desperately need a new agreement to be negotiated so that we're not involved in imposing under failing and anti-dumping duties on Canadian softwood lumber imports.

We want Canada to play by the rules, but we need a new agreement. So, I just wanted to reinforce what my colleagues have said, and I'll submit my question for the record. Thank you, Madam Chairman.

Senator SHAHEEN. Thank you very much, Senator Collins. And let me just add my voice to Senator Collins with respect to lobster. That is—we don't have as many in New Hampshire as Maine does, but it is also an issue for us, and we have seen a devastation in the market from companies that were sending lobsters to China. And that market doesn't exist anymore. So, Senator Hagerty. Oh, no. I'm sorry. Do we have anybody online? So, Senator Hagerty.

Senator HAGERTY. Well, Chairman Shaheen, thank you very much for holding this hearing. And Ambassador, I want to congratulate you. Your reputation is excellent. We've talked about that, and I look forward to working with you. I also want to thank you for the negotiations you undertook with SK and LG in electric batteries. Tennessee is an automotive-producing State. We're at the cutting edge of automotive production, and having that capacity nearby is going to be absolutely critical for us to move into the next stage of automotive excellence. So, I applaud the actions that you've taken. It's going to have a very significant impact on the supply chain that's so critical to the automotive industry in our State.

I'd like to talk about another industry, though, that's critical to our State. You know that I'm from Tennessee, and I'm sure you're not going to be surprised at this question. But as my colleague, Ranking Member Moran mentioned, there's been a 4-month hiatus that's taken place to negotiate between airlines, aircraft frames. There have also been a number of beverages included in that hiatus on those tariffs. But what's missing is American whiskey. American whiskey remains subject to a 25 percent tariff, and that tariff is going to go up to 50 percent in June if something isn't done about it.

American whiskey is critical to Tennessee's industry. More important, it's critical to our brand as a nation. I think you could go anywhere in the world, and ask people about my home State of Tennessee, and they could tell you that whiskey is a big part of our culture. People abroad aren't going to be able to buy our whiskey at a 50 percent tariff rate, so I'm interested in what you'll be able to do to take on the problems of American whiskey being taxed at 50 percent.

Ms. TAI. Senator Hagerty, you are—it's very nice to see you in person, and you're right. Whiskey, bourbon from Tennessee—Kentucky, also, I know is a big producing State—are very much on our minds, and we hear from these stakeholders directly about their concerns from these EU retaliatory tariffs.

What I would share with you is this. So, first, I want to—I want you to know I think a lot about this, and we are working on this. But let me just frame this up a little bit in terms of the tariffs that the Europeans have on our whiskey, which is they're part of the Section 232 suite of tariffs. This is where we are, and this is actually, in terms of enforcement, using tariffs for enforcement, this is actually the logic for how they're supposed to work. We impose them, our counterparts, when they have the right, will impose them back. And it's not for the sake, usually, of just hitting each other with tariffs. It's usually to motivate the two sides to get at resolving the issue.

In the case of the 232s, the issue that we need to resolve is the global overcapacity problem. And so, here I'm using a slightly different set of words and tact to convey to you, but the same message, that we really do need to work with others, especially the European Union, on the overall steel overcapacity problem. And so, what I am hoping is that they see that problem, and they see it to be as serious a challenge to our ability to produce and compete in steelmaking as we see it, and that, working together, we will be

able to resolve these sets of tariffs so that we can join forces on the bigger picture.

So, that's how I'm approaching these conversations. I know that there are others in the administration who are working on this, as well, and we will be working together to get at more effective solutions to the problems that we have.

Senator HAGERTY. As you can imagine, I don't want Tennessee whiskey or Kentucky bourbon to be a casualty of this. Certain beverages have been included. Others have not. I'm not certain the logic of how one was chosen, the other was not, but our situations are similar. In fact, maybe even more important given the identity associated with Tennessee whiskey and our brethren in other States, and it's critically important to our State. So, I appreciate your attention to that.

I'd like to turn, if I could, to the role that you play with the World Trade Organization and talk about something that has deeply concerned me and I'm sure many Members of the subcommittee. And that's the way China is treated at the WTO. They enjoy preferential treatment. They take on weaker commitments, and they've done a very good job of doing this in a number of multilateral organizations. I'm sure you're aware of the disparate treatment that they receive, and I would be very interested in hearing your thoughts on that, and what we might be able to do about rectifying the situation.

Ms. TAI. Senator Hagerty, I know I'm running out of your time, so let me try to be succinct here. It is very concerning, the rules at the WTO that allow for countries to designate themselves as developing and to allow them to have dispensations from the rules, and this is something that we will continue to work on at the WTO, and work with others on. We are making some progress, and I am hopeful that we will be able to make a difference at the WTO.

Senator HAGERTY. If I can help in any way, I know some other nations that I think feel the same way we do, and I'd be happy to work with you on that.

Ms. TAI. Thank you.

Senator HAGERTY. Thank you. Thank you, Ms. Chairman.

Senator SHAHEEN. Thank you, Senator Hagerty. And I just want to clarify something. The Ambassador is not suggesting that there is an oversupply of whiskey in the world, are you?

[Laughter.]

Ms. TAI. I'm sorry if I—that wasn't clear. Okay.

Senator HAGERTY. I got it.

Senator SHAHEEN. Just wanted to clarify that.

Senator BRAUN. Nobody would complain.

[Laughter.]

Senator SHAHEEN. Senator Braun.

Senator BRAUN. Thank you, Madam Chair. Good to be talking with you. Indiana is a top steel-producing State in the U.S. As a result of repeated surges in steel imports, the Trump administration implemented Section 232 tariffs, which helped kind of stabilize the domestic steel industry, allowed steel makers to invest billions of dollars in new facilities and upgrades to existing mills. I think nearly half of the world's excess steel capacity is housed within China. These efforts saved thousands of jobs.

As you know, the tariffs are designed to protect against that global overcapacity, and you've got some anti-market policies that go along with the glut, so it really creates a condition to where you can get predatory actions that don't play by the rules necessarily.

I know that a number of foreign governments are pressing to have the tariffs lifted, but I remain concerned, because I don't know that any of the underlying practices are going to change, and I think certainly that capacity's going to be there. Very tempting to try to use it. What assurances can you provide that the Biden administration will preserve the steel tariffs program to prevent a new surge of imports, and to use it as a tool until you see real change happening within the way the Chinese handle this excess capacity?

Ms. TAI. Senator Braun, that is a really critical question because the 232 tariffs are very much on everyone's minds, because of the tariffs themselves, and also because of retaliatory actions that our trading partners have taken, including on Tennessee whiskey, as we just heard from Senator Hagerty.

I want to assure you that I understand, see and fully accept that there is a global overcapacity problem with the steel market, and that the tools that have been used, the 232 tariffs, have had an impact on steel production here in the United States, a positive one. But they have also carried with them costs. And so, for the Biden administration, as the U.S. Trade Representative, my focus is to figure out how we improve and the effectiveness of the tools that we use in support of American steelmaking, but to try to address some of the unintended consequences, I think, in terms of the frictions that this has generated with our trading partners.

And so, solutions that we come to with our trading partners, I believe, in my core, really have to address the larger issue around the overcapacity in the market.

Senator BRAUN. In your conversation with Senator Van Hollen, you said keep your eye on the ball. Be watchful. Cited maybe other industries. Steel is so important to Indiana. What would be the top two or three, in order of concern, other industries that you think we can have similar issues dealing with the Chinese?

Ms. TAI. Senator Braun, I want to be careful here in terms of prioritizing because all of our industries, they're like our children. They're important. They're important to all of us. But let me say this. I think that if you look at trend lines in industrial sectors, and you also look at the ambitions and the policies that China has put forward in its plans, made in China 2025, its 13th 5-year plan, 14th 5-year plan, you can mark and see where trends are going to go. And so, some of them are because of overcapacity. Some——

Senator BRAUN. Could you name a few, not necessarily putting them in order that you might be concerned with?

Ms. TAI. I can provide a couple examples. I think that we also see with cement, for example, that there is domination by China in the global market. Vitamin C, actually, had been a subject of an international antitrust case here in the United States, getting at the Chinese market dominance in this area. So, those are a couple examples that have been around, and if there are others, and this is of interest to you, I'd be very happy to continue this conversation with you.

Senator BRAUN. Thank you.

Senator SHAHEEN. Thank you very much, Senator Braun. Ambassador, we don't have anyone currently on the line or any other people in the queue, but I have some more questions, so, I'm going to do a second, maybe a third round here.

I want to go back to climate change, and to your remarks. I mentioned this in my opening statement. I was very encouraged by the—your comments around climate change in your Earth Day policy speech, and one of the things you talked about, you said—and I think I'm quoting you accurately—is that, "Our trade system itself creates an incentive to compete by maintaining lower environmental standards, or worse yet, by lowering those standards even further."

Given the President's recent announcement about further slashing our greenhouse gas emissions by 2030, and the commitment of the Biden administration to climate change, can you talk a little bit about how you see trade policy helping us to address climate change?

Ms. TAI. I would be delighted to, Senator Shaheen. As I discussed some in those remarks, we have wanted to expand out the disciplines in our trade agreements, in our trade policies, in our trade conversations beyond tariffs and these border rules. And we have done so very successfully in a number of areas. If you look at the WTO agreements, it evolved from the general agreement on tariffs on trade to get at other types of issues that impact trade.

But even in the WTO agreements, despite a very bold and really poetically written preamble that talks about standards of living, full employment, and the preservation of our natural resources for a sustainable economic future, there aren't any disciplines there. And I think that what is really important about the moment that we are in right now is here in the United States, we have made tremendous progress from 25 years ago, where our trade agreements, as a matter of course now, on a bipartisan accepted and supported basis, include labor and environment provisions. Full chapters that indicate that the terms of worker protections and environmental protections, these are economic issues. They impact the terms of trade. They impact how our economy is run.

And we've made a lot of progress just in the last 4 years, in terms of building out enhanced rules, enhanced enforcement mechanisms, to ensure better terms of competition in terms of worker protections and labor as an input into our economy.

Now is really the time to focus on increasing and improving, building out these environmental provisions, because it is very clear to the world right now that climate and the environment are not just policies in and of themselves for their own goods, but they're also public health policies, and then more fundamentally, they are economic policies. They are going to be critical to our ability to be the strong economic power that we are so used to, and so lucky to have been. And they're going to be critical to our ability to compete and lead as we go into the next decades of our future.

Senator SHAHEEN. Well, I think one place where the importance of trade agreements in addressing that was USMCA, and your involvement in, I think, and Democrats' involvement in trying to improve that agreement were significant. It's something that we pay

a lot of attention to in New Hampshire, because we do a lot of trade with China and with Mexico. And one of the real concerns as the first phase of—the first draft of that agreement was rolled out was the lack of those environmental policies that meant that we were not competing on a level playing field.

So, can you talk about how you see USMCA now actually implementing some of the climate opportunities that we have as we're looking at trade?

Ms. TAI. Well, I really appreciate this question. USMCA does actually have, and I think it does set the bar right now for the environmental provisions in our trade agreements. And while there isn't explicitly built out climate provisions, there are a lot of provisions in here that do impact the climate, chief among them, conservation provisions, enforcement provisions that are intended to enhance our enforcement and our coordinated enforcement against trade in illegally harvested timber, illegally taken wildlife, and all of these do impact the climate.

So, I think that USMCA is an important base to build off of, but we shouldn't be afraid to be more bold, and to demand more from our trading partners, given that environmental issues, like our health issues, are ones where we are actually need to be working with others in order to make a difference for ourselves and for the world.

Senator SHAHEEN. And so, are you feeling pretty confident if there are disputes that exist that the mechanisms that are there to try and resolve those will be able to work?

Ms. TAI. That's a great question. I so appreciate that you've asked me this question. My view is that we did our very best to put in the most effective tools for enforcement that we know how. And they may not be perfect, but we're not going to know how effective they're going to be if we don't use them.

And so, I am very committed. I am not afraid to use the enforcement tools. Some of them are cooperative, some of them are more confrontational, some are a mix, but I really think that in order to do the USMCA justice, and in order to do the partnership that we've renewed with Mexico and Canada, give them the respect that they deserve, we need to use all of these tools to see if they work. And then improve them, and improve our use of them, because that is the point of doing a trade agreement. It's not to put it on the shelf and look at it. It's to make sure that it works.

Senator SHAHEEN. So, we don't have any examples yet of using the dispute resolution mechanisms to see how companies are responding to that?

Ms. TAI. We do have one example. Actually, there are two examples of where USTR has initiated the first steps in an enforcement tool. So, the first one was done under the Trump administration by Ambassador Lighthizer. He requested consultations with Canada on dairy.

And the other initiation we undertook earlier in, I think it was late March or early April, we activated a customs verification cooperation agreement that we have with Mexico, seeking information from Mexico, Mexican customs, on leads that we have that there is illegal wildlife or timber traffic that is happening through

the Mexican ports, and we are expecting to hear back from Mexico on that soon.

But absolutely we have taken the first steps, and we will continue to make sure that we've used every one of the tools that we have.

Senator SHAHEEN. That's good to hear. I look forward to hearing more about how those mechanisms are used, and how, I don't think pleased is the right word, but how companies feel after they've had a chance to use those.

The other concern that I've heard from New Hampshire companies about with respect to USMCA, and again, they were very pleased when it got done, but one issue has been the de minimis thresholds, which of course, those are very important for small businesses that export. In New Hampshire, most of our businesses are small, so they are paying real attention to what's happening there.

Can you talk about what USTR is doing to ensure that Mexico is following the agreement when it comes to de minimis thresholds?

Ms. TAI. Absolutely. I was going to say that I would be happy to remind my Mexican and Canadian counterparts how disappointed stakeholders are in the United States with where they were willing to commit themselves on, their de minimis thresholds. But with respect to Mexico, let me say this. There are a number of concerns that we have with Mexico's performance of its commitments under USMCA.

I want to recognize here, maybe a little belatedly, and this probably applies to our review of our own performance, but also the performance of our trading partners under our agreements. The last year has not been a normal year, and I do want to recognize that COVID–19 has impacted all of us in lots of different ways.

So, my conversations with Mexico. I am very cognizant of the challenges that they are facing, just as we are facing challenges. But that doesn't stop us from wanting to make sure that trade is still happening and that promises are being fulfilled. So, I have raised bilateral issues that we have with Mexico. My counterpart in Mexico, Secretary Clouthier, she was not shy about raising Mexico's concerns about what we are doing here in the United States.

On USMCA, I am looking forward to a free trade commission. This is sort of the annual get-together to review performance and to take care of the agreement. We will be setting that up in the coming weeks, and I will be happy to report back to you after that takes place.

Senator SHAHEEN. Well, thank you, and thank you for adding Canada to that, because obviously Canada is also an issue. I had the opportunity several years ago to raise the—our concerns about their de minimis thresholds with the foreign minister, and he was very responsive. I think when he got back to the government, they were less so. So, I do recognize that this is an issue in both participants with USMCA.

Finally, I just want to ask how the pandemic has affected your agency's operations. I know it's really been hard on everyone. And are there costs that the agency has incurred that we should be paying attention to as we're looking at the budget that's presented

both by the administration and as we're thinking about what we need to do for the next year?

Ms. TAI. I so appreciate that question, because, being a returnee to USTR, and having spent some very formative years there, I care very much about the people who make USTR work, and what I would say in terms of the costs of the pandemic, I would say that the costs are probably more to morale and more personal, in terms of the uncertainty and in terms of the difficulties that it has imposed on people.

And, you know, workers at USTR are not alone. I know that for families with children, especially young children, for colleagues who are single, that they are some of the ones who have been hit the hardest by the reality of needing to work through the pandemic. So, what is interesting is as we look at the USTR as an agency, and the impact of the pandemic, what I would say is mostly it's that we have not spent our funds at the rate that we expected because of pandemic restrictions, and because we are placing the health and safety of our colleagues and those of our counterparts really at the priority of what we are doing.

So, that's probably my message to you in terms of the pandemic's impact on USTR, which is most of our budget is dedicated to travel and to personnel. We are a small but mighty machine, and in a pandemic, it is hard to travel, and unsafe. And it is also hard to replace personnel and recruit personnel. So, those are probably the largest impacts of the pandemic that I have to share with you.

Senator SHAHEEN. Well, I hope you will stay in touch with this subcommittee as you're continuing to work on your budget, because the more information we have, the better job we can do in trying to address what your needs are.

Ms. TAI. Understood.

Senator SHAHEEN. Senator Moran.

Senator MORAN. Chairman, I know you're disappointed that I made it back, but——

Senator SHAHEEN. Oh, I'm so glad. I was out of questions.

Senator MORAN. Thank you very much for—again for conducting this hearing. Ambassador, thank you for being here. Let me go back to a topic that I raised with you in my earlier questions and in my opening statement.

I mentioned to you that I have joined 39 of my Senate colleagues, so 40 of us have written to you urging that you restart the exclusion process for imports from China, subject to tariffs under Section 301. Again, this subcommittee on a bipartisan basis led the effort to persuade the prior administration to set up exclusion process. I'm not sure that was their intention when we started that effort, and I remain in my strong belief that Americans ought to continue to have that opportunity to petition their government for relief from tariffs. The question is more specific. Do you agree with that sentiment? Do you agree with me that Americans should continue to have that opportunity to find exclusions under Section 301?

Ms. TAI. Senator Moran, I would say that in general, yes, I do agree. And I don't want to raise any consternation here, I just want to be—have the opportunity to fill in a little bit. At my confirmation hearing, Senator Portman, who I believe is also on that letter, had asked me to commit to a top-to-bottom review at USTR, and

he really recommended it to me as something that he had done when he was USTR. And this is a top-to-bottom review specifically on China.

And at the time when Senator Portman was U.S. Trade Representative was 2005, 2006, China had been in the WTO for about four or 5 years, and it was actually I think a really excellent idea to do that top-to-bottom review and to think strategically about that particular relationship.

Well, it's 2021 now, and we are in a different place in our own economic history and in our relationship with China. And certainly, China has changed a lot since that last review was done. So, I very readily committed to Senator Portman to undertaking a top-to-bottom China review at USTR, and we will be looking at the full picture, but the tariffs themselves we will be looking at, as well as the exclusion process.

And part of that will also be reviewing how the exclusions were done before, the logic behind the tariffs, the logic behind the exclusions, and so, my answer to you is I am very interested in this. I'm very interested in how we make our trade policies across the board more effective and more strategic. I think that every challenge is also an opportunity, that Ambassador Lighthizer has presented me with many opportunities, which I am embracing, and I would like to build on the gains that we have made over the past many years and make our trade policy work better.

So, this question about the tariffs and the exclusions I know are on the minds of many, and are very consequential to stakeholders large and small, and we will be undertaking this responsibility with that sense of gravity.

Senator MORAN. Do you think you can complete that review and make a decision, and if it is to have an exclusion process, that that exclusion process can be in place before circumstances are such that the damage is being done to—particularly to American manufacturers?

Ms. TAI. I want to convey to you that I am keenly aware of how much time is of the essence, in particular in this current economic environment.

Senator MORAN. We're delighted to have you here so early in the appropriations process, but it gives you the opportunity to defer to a point in time in which you have the opportunity to have reviewed, which is not what I'm really complaining about, only smiling about. So, we'll be back in touch.

Let me ask one more question. This was in regard to Mexico and USMCA. The president of Mexico recently issued a decree that would ban glyphosate and biotech corn in Mexican diets by 2024. This announcement comes on the heels of Mexico also imposing certain regulatory barriers to agricultural imports, their approval. These actions threaten to cause significant trade disruption, undercut the commitments our nations just agreed to in USMCA. My question is, are you aware of these issues, and can you—if so, can you provide me with an overview what USTR intends to do or plans to do in addressing them?

Ms. TAI. I'm very aware of these issues, and I have raised them with my Mexican counterpart, just as I raised our Canadian issues with my Canadian counterpart. I just conveyed to Chair Shaheen

that there will be a Free Trade Commission convening under the USMCA in the next few weeks, and that will give us an opportunity to—at my level, to again raise concerns. But I want to let you know that I am committed to using all the tools that we have in the USMCA toolbox, and there are a lot. And there are some of them that are new, and these issues are absolutely on a fairly full radar of areas and concerns that we are hearing from Senators, from the stakeholders themselves about how the agreement is not operating the way that we would like it to.

So, we have our teams that work on this day in and day out. We are looking at it in terms of what our options are to resolve these issues soon, and also what other options are if we're not able to resolve them in the near term.

Senator MORAN. Ambassador, thank you for your answers. I've been impressed by you and the answers as well as the future answers I expect to get. So, thank you, thank you very much for your leadership.

Ms. TAI. Thank you.

Senator SHAHEEN. Thank you, Senator Moran, and we can always invite Ambassador Tai back, so, I think we should assume that.

Senator MORAN. I appreciate you saying that, and welcome that opportunity.

Senator SHAHEEN. Thank you. Well, I also want to thank you very much, Ambassador, for your appearance here, for your testimony, and for your willingness to work with the subcommittee, and Members of Congress on the challenges that we face going forward with trade.

ADDITIONAL COMMITTEE QUESTIONS

If there are no further questions this afternoon, Senators may submit additional questions for the subcommittee's official hearing record. We ask that USTR respond within 30 days of receiving those questions, and the subcommittee will stand in recess. Thank you.

[The following questions were not asked at the hearing, but were submitted to the U.S. Trade Representative for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO AMBASSADOR KATHERINE TAI

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

A REVIEW OF THE ACTIVITIES AND FISCAL YEAR 2022 FUNDING PRIORITIES OF THE OFFICE OF THE U.S. TRADE REPRESENTATIVE

Question 1. On March 30, I sent a letter to the President, with Senator Tillis, requesting that the administration prioritize the appointment of critical intellectual property officials, including the Chief Innovation and Intellectual Property Negotiator at USTR. As noted in that letter, IP-intensive industries are poised to continue to be an engine for growth during this time of economic recovery, which is why focusing on promoting and protecting IP-related jobs and economic output must be a key priority. Unfortunately, this position at USTR has not been filled since its creation in 2016.

1a. Do you agree that filling the position of Chief Innovation and Intellectual Property Negotiator at USTR must be a priority for the Administration?

1b. Does the administration intend to put forward a nominee for this position? If so, when do you expect the nomination will be sent to the Senate?

Answer. As you note, the Chief Innovation and IP Negotiator position has not been filled since it was created by Congress. The issue of intellectual property is one where there are strong views on both sides, and I will keep that in mind as we consider the path forward for filling it.

QUESTIONS SUBMITTED BY SENATOR JOE MANCHIN, III

Question 1. For decades, the world's biggest companies have flocked to the United States, attracted by our skilled workforce, expansive consumers and legal protections. These companies have created millions of good American jobs and revitalized many communities, especially in rural States like West Virginia. According to the recent government data, international companies created 80 percent of all new U.S. manufacturing jobs from 2013 to 2018. The Toyota plant in Buffalo, West Virginia employs over 2,000 West Virginians in Putnam County. There, Toyota continues to provide the economic engine for the area. Nonetheless, the United States runs a trillion-dollar annual trade deficit because it has lost most of its manufacturing industries. Although we created all the industries of the digital age, they have predominately migrated overseas.

1a. What opportunities do you see for new manufacturing jobs in the United States?

1b. How do we ensure that our trade policies benefit economically depressed and rural areas?

1c. How can we ensure that manufacturing jobs do not get offshored?

Answer. The Biden-Harris Administration believes a strong U.S. manufacturing base is critical both for U.S. national security and a strong recovery from the COVID–19 shock. The new investments in both U.S. infrastructure and the U.S. industrial base will be critical to creating the new manufacturing jobs the United States needs.

The American worker is at the center of the Biden Administration's trade agenda. President Biden has made it clear that his first priority is new domestic investments, not new trade deals. Those investments, including in infrastructure, are needed to enable American workers to compete effectively for the jobs of the future. The President has made his commitment to "Buy American" clear, including through the creation of a Made in America director within the Office of Management and Budget to link Federal procurement with domestic manufacturing. The American Jobs Plan recognizes the importance of creating good-paying jobs in rural America. Further, the work that emerges from the Biden Administration's Executive Order 14017 on America's Supply Chains will generate additional recommendations for how to strengthen the resilience of U.S. supply chains in four vital product areas—critical materials, advanced batteries, active pharmaceutical ingredients and semiconductors—as well as key sectors in the U.S. industrial base. The Biden Administration's foreign economic policy for the middle class recognizes that trade policy must support domestic economic efforts.

The Biden Administration is also committed to ending the incentives in the U.S. tax code that have encouraged the offshoring of U.S. manufacturing jobs. The Treasury Department is actively working with a number of our key trading partners in the G–20 and the OECD on a multilateral agreement to end a race to the bottom on tax rates.

At USTR, we are reviewing our trade commitments to identify ways in which trade agreements can do more to help strengthen U.S. manufacturing. We will continue to work to ensure that American workers can compete on a level playing field, not one where our trading partners gain false competitive advantages through lax labor and environmental standards.

Question 2. It is no secret that the Biden Administration is looking to transition our Nation's fleet of gas vehicles to primarily electric vehicles. In the Administration's infrastructure plan, it was made very clear when they sought $174 billion to support electric vehicle manufacturing. I am very concerned about some of the questionable mining practices, both on the humanitarian and environmental side, in places like the Democratic Republic of the Congo, which holds 50 percent of the world's reserves of cobalt, which has also been developed in large part by China. I am also concerned about our reliance on a small list of countries to provide the materials we need to manufacture lithium-ion batteries. If those supply chains were interrupted or cut-off entirely, we wouldn't have any alternatives at this point. If we are going to build up the EV market in the United States, I believe we need to make sure we are sourcing these battery materials responsibly and domestically wherever possible or looking for sustainable alternatives.

2a. As U.S. Trade Representative, how do you plan on shoring up domestic supply chains and reducing reliance on foreign materials for production of goods, especially in EV production?

Answer. I share your concerns about the supply chain for the critical materials needed for electric vehicle (EV) battery production. The full supply chain for advanced batteries is being examined as a result of President's Executive Order (EO) on America's Supply Chains. The recently released 100-Day reviews, "Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth," pursuant to that EO examine this issue in further detail. Those reviews assert, in part, that "the United States should take a mineral-by-mineral approach to look for opportunities to sustainably produce and refine domestic minerals for key battery materials. For battery materials where the United States does not have strong deposits suited for economic extraction, the best pathway to getting a stable material supply in the near-term is through allies and trading partners with responsible environmental and labor standards, and in the long-term by capturing and recycling the supply of materials in end-of-life batteries from EVs and storage. Both extracted and recycled materials and minerals will require refining and processing, and refining and processing capacity should be scaled up domestically to utilize this supply, capture an important stage of the supply chain that fuels downstream battery manufacturing, and avoid the need to export raw materials and reimport processed components." I will work to ensure America's trade policies support the recommendations that emerge from these supply chain reviews.

Question 3. In 2017, the Office of the United States Trade Representative initiated an investigation to determine whether certain Chinese "laws, policies, practices or actions are unreasonable or discriminatory and may be harming American intellectual property rights, innovation or technology development." Because of this investigation, USTR imposed tariffs under Section 301 of the Trade Act of 1974. However, in doing so, they also created an exclusion process in which certain businesses and entities could request an exclusion from the tariffs for certain goods that were not readily available in the United States. Unfortunately, many of these exemptions expired on December 31, 2020, and there has yet to be a process for Section 301 tariff exemptions put back in its place.

3a. Does USTR plan to reinstate an exclusion process for these tariffs and if so, when can we expect to see that process start?

Answer. At the request and recommendation of Senator Portman, I have committed to doing a top-to-bottom review of our China trade policy, with the goal of making our trade policies more effective and more strategic. As part of that review, we are looking at the China 301 tariffs and the exclusions process. Our plan to reexamine the tariffs provides us with important opportunities to craft thoughtful and effective responses to China's unfair trade practices.

Question 4. As I have stated numerous times, I have been supportive of the efforts to expand steel and aluminum tariffs under Section 232 of the Trade Expansion Act of 1962. In my State of West Virginia, steel and aluminum producers are still struggling to survive because of foreign traders who circumvent our trade laws and evade duty payments by transshipping products through third party countries. While I appreciate the Biden Administration's commitment to review the effectiveness of existing tariffs, many of my constituents and businesses are asking when a decision will be made on the tariffs put in place by the prior administration.

4a. Given your examination of current trade policies, do you believe that the current tariffs on steel and aluminum are effective?

4b. When can we expect an announcement on the future of section 232 steel and aluminum tariffs?

Answer. With respect to the section 232 tariffs on steel and aluminum, we have a very significant problem in the global steel and aluminum markets that is driven primarily by overcapacity in China and other countries, particularly in Southeast Asia and the Middle East. The Administration is working to address the market distorting measures in economies that have led to overcapacity in the global steel and aluminum industries and the resulting national security threats.

In addition to the thorough review of the section 232 measures and product and country exclusions that is currently underway by the Department of Commerce, the Administration is also consulting closely with various domestic stakeholders and like-minded partners around the world sharing similar national security interests to address market distorting measures in non-market economies that pose a serious threat to the market-oriented U.S. steel and aluminum industries and the workers in those industries. On May 17, 2021, the United States and the European Union

(EU) announced the start of discussions to address global steel and aluminum excess capacity and the market distortions that result from this excess capacity. The Administration is committed to working with the EU and other like-minded partners to address excess capacity, ensure the long-term viability of our steel and aluminum industries, and strengthen our democratic alliance.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

Question 1. The USMCA implementing legislation established the Independent Mexico Labor Expert Board (IMLEB) for the purpose of monitoring and evaluating the implementation of Mexico's labor reform and compliance with its labor obligations. The Board also advises the Interagency Labor Committee (co-chaired by the USTR) with respect to capacity building activities needed to support such implementation and compliance.

On December 15, 2020, the Board submitted an interim report to assist the Interagency Labor Committee and the Congress in their assessment of the efforts of Mexico to implement Mexico's labor reform, and the manner and extent to which labor laws are generally enforced in Mexico. While the first phase of implementation of the new labor institutions established under the 2019 reform was delayed until November 18, 2020 (due to the Covid-19 pandemic), the Board identified a number of serious concerns with Mexico's labor law enforcement process that it believed must be addressed promptly. In addition, the Board identified issues affecting capacity building activities needed to support the implementation of Mexico's labor reform and compliance with its labor obligations that also require immediate attention.

Ambassador Tai, the USMCA imposed new stringent labor standards that we hope will become the model for future trade agreements. But without effective monitoring and enforcement mechanisms, these labor provisions will be toothless.

1a. Based on this report from the Independent Mexico Labor Expert Board (IMLEB), can you tell us what concrete actions the USTR will be prepared to take to address their recommendations, either alone or in conjunction with other agencies such as the Department of Labor?

Answer. USTR has carefully considered the information and recommendations included in the IMLEB report, including by integrating that information into our monitoring. We are engaging with the Government of Mexico on a regular basis to press for progress and support their efforts to implement the reforms required by the USMCA, including on issues raised by the IMLEB. USTR hosted the first Free Trade Commission meeting under the USMCA on May 17 and 18, and plans to hold a Labor Council meeting soon. On May 12, USTR submitted the first ever USMCA Rapid Response Labor Mechanism (RRM) request for review to Mexico. The request asked Mexico to review whether workers at a General Motors (GM) facility are being denied the right of free association and collective bargaining. This self-initiated action shows the Biden-Harris Administration's serious commitment to workers and a worker-centered trade policy. In addition, the Department of Labor has launched several significant technical assistance projects to support the Government of Mexico in its labor reform and to strengthen workers' ability to exercise their labor rights. USTR collaborates closely with the Department of Labor. We look forward to continued reporting from the IMLEB.

1b. Do you anticipate that an increase in funding will be needed to adequately carry out these activities?

1c. Or does the funding provided under the USMCA implementing legislation provide sufficient funding?

Answer. USTR is using the funding provided under the USMCA implementing legislation, which runs through 2023, to dedicate current staff and hire additional staff to support the monitor and enforcement activities under USMCA. I look forward to working with members of this subcommittee to ensure that USTR has adequate resources to fully implement and enforce USMCA.

Question 2. The Rapid Response Mechanism was a novel innovation of the USMCA, which ensured that workers could receive relief through facility-level enforcement of USCMA labor violations. The USTR's 2021 policy agenda notes that the Biden Administration is committed to self-initiating and advancing petitions under this mechanism.

2a. Ambassador Tai, could you tell us a little bit more about what the USTR has (or intends to do) on this front to initiate petitions?

Answer. On May 12, USTR submitted the first ever USMCA Rapid Response Labor Mechanism (RRM) request for review to Mexico. The request asked Mexico to review whether workers at a General Motors (GM) facility are being denied the right of free association and collective bargaining. This self-initiated action shows the Biden-Harris Administration's serious commitment to workers and a worker-centered trade policy. Working with the Department of Labor, USTR engages in monitoring efforts, and we will not hesitate to self-initiate additional matters when we become aware of facts that warrant such action. Additionally, the Interagency Labor Committee for Monitoring and Enforcement (ILC), which I co-chair with the Secretary of Labor, receives and reviews USMCA labor petitions from the public. If the ILC determines, in response to an RRM petition, that there is sufficient, credible evidence of a denial of rights enabling the good-faith invocation of enforcement mechanisms, I will submit a request for review to Mexico.

2b. How are you monitoring individual facilities, and do you believe you have the resources that you need to fully carry this out?

2c. If not, what additional funding, resources, or authority would be needed to successfully undertake these activities?

Answer. USTR is using the funding provided under the USMCA implementing legislation, which runs through 2023, to dedicate current staff and hire additional staff to support the monitor and enforcement activities under USMCA. I look forward to working with members of this subcommittee to ensure that USTR has adequate resources to fully implement and enforce USMCA, including the labor chapter.

QUESTIONS SUBMITTED BY SENATOR LISA MURKOWSKI

Question 1. Ambassador Tai, as we discussed during the April 28 hearing, China continues to fall short of its seafood purchase commitments as outlined in Chapter Six of Phase One of the Economic and Trade Agreement between the U.S. and China. This is in spite of the fact that China has purchased increasing quantities of U.S. livestock and other agricultural exports under the Phase One agreement. This seafood-specific failure has resulted in significant economic losses for certain fisheries in Alaska and across the Nation, and I urge you to take action to alleviate these losses and push China to honor its seafood purchase promises. One potential strategy is to secure a commitment from China to apply a blanket tariff exclusion on U.S. seafood imports. This option would eliminate any difficulties around obtaining individual temporary tariff waivers.

1a. Will USTR consider pursuing a blanket tariff exclusion to restore the Chinese market for American seafood companies?

Answer. During meetings held under the Phase One Agreement to review China's implementation progress, the U.S. side has frequently raised concerns about the slow pace of China's purchases of U.S. goods, including seafood. While China has established a tariff exclusion process that makes tariff exclusions available for U.S. goods like seafood that are covered by Chapter Six of the Phase One Agreement, we understand from U.S. industry that this tariff exclusion process has not been working well for goods in certain industries where the practice is to enter into long-term contracts or where importers tend to be small, private companies reluctant to make use of the available tariff exclusion process as opposed to large State-owned enterprises. We have been raising this issue with the Chinese side, and we agree with you that a blanket tariff exclusion for these types of goods would help to promote increased purchases by Chinese companies.

Question 2. Ambassador Tai, on top of the devastation that Southeast Alaska is seeing from a lost tourism season, we also continue to suffer from the impacts of a 25 percent tariff rate on Alaska spruce and hemlock. Although the Phase One agreement signed by the Trump Administration created a waiver for timber tariffs, Alaska spruce exports to China—our primary buyer of spruce—flatlined the last 2 years, and the future remains uncertain.

2a. What specific actions are you taking to help us work through this tariff?

2b. Is there anything that you need from Congress to help on this front?

Answer. During meetings held under the Phase One Agreement to review China's implementation progress, the U.S. side has addressed China's tariff exclusion process, and specifically Alaska spruce and hemlock, with the Chinese side. We understand that China's tariff exclusion process has been regularly used to secure tariff exclusions for goods that are covered by Chapter Six of the Phase One Agreement.

In addition, for Alaska spruce and hemlock, we have clarified that China makes tariff exclusions available for these products for 1 year from the date that a tariff exclusion has been granted, subject to periodic updates on the purchases being made. We have also communicated this information to U.S. industry.

QUESTIONS SUBMITTED BY SENATOR SUSAN COLLINS

Question 1. In February, Sen. Sinema, Sen. Kelley, and I led several of our colleagues in writing to President Biden to urge him to remove the Section 301 tariffs that had been levied on food and beverage imported from the EU since October 2019 due to the large civil aircraft subsidies dispute. A few weeks later, on March 5, the White House announced that these tariffs would be suspended for an initial 4 months. I greatly appreciate that the Administration heeded our call since these tariffs have been extremely detrimental to small businesses in Maine. Is the Administration working with the E.U. to make this suspension permanent?

Answer. USTR is engaging intensively with the EU and the UK in an attempt to reach a balanced settlement to the large civil aircraft disputes that will ensure a level playing field and address the harms to our workers and businesses. We are also seeking a joint vision with the EU and the UK to address the challenges posed by non-market economic practices of China and other new entrants to the large civil aircraft market.

QUESTIONS SUBMITTED BY SENATOR LINDSEY GRAHAM

Question 1. What will be the impact on small and medium sized domestic remodeling/renovation businesses if tariffs are imposed on building materials such as flooring and countertops as a response to Turkey's Digital Services Tax (DST)?

Answer. USTR recently requested public comments and held a hearing on a proposed Section 301 action arising from the investigation of Turkey's Digital Services Tax on May 7, 2021. In determining what action, if any, to take, USTR will carefully consider the potential impact on small and medium sized businesses.

QUESTIONS SUBMITTED BY SENATOR JOHN BOOZMAN

Question 1. I have always been supportive of holding our trading partners accountable, especially in the agriculture sector. As you know, India is often at the top of the list of employing tariff and non-tariff trade barriers as well as providing their domestic agriculture producers with support that far exceeds their WTO commitments.

Arkansas grows over half of the U.S. rice crop, and in the past decade, rice imports from India have soared, displacing U.S. production that simply cannot compete with the generously subsidized Indian rice.

In late March, USTR announced proposed action against India, among other countries, for an investigation into digital services taxes imposed by those countries. Part of the list of proposed retaliatory duties to be imposed is a 25 percent duty on brown Basmati imports. However, rice producers would like to see USTR expand the proposed retaliatory duties to all other rice and rice products imported from India.

USTR is currently taking comments on this issue, and I know there are plans to hold hearings in May to determine final retaliatory duties later this year.

I cannot stress enough the importance of expanding the proposed retaliatory duties to apply to all rice and rice products imported from India.

Ambassador Tai, I appreciate you taking into consideration my comments and those of the U.S. rice industry. Can I count on you to give this matter your full consideration and support?

Answer. USTR recently requested public comments and held a hearing on a proposed Section 301 action arising from the investigation of India's Digital Services Tax on May 10, 2021. In determining what action, if any, to take, USTR will carefully consider your comments regarding the inclusion of rice and rice products on the final product list.

Question 2. Since the United Kingdom (UK) formally left the European Union (EU), the UK offers a significant market for our farmers and ranchers. In particular, two of the top ag products from my home state—poultry and rice—have significant potential to gain market access through a UK Free Trade Agreement.

Before Brexit, the UK was tied to the EU's practices of employing tariff and non-tariff trade barriers. For poultry, it is an unscientific ban on products treated with certain pathogen reduction treatments, and for rice, it was protectionist tariffs meant to prop up EU rice farmers elsewhere in the EU. Now that the UK is free to make their own trade deals, I have been supportive of a Free Trade Agreement with the UK that is rules-based, mutually beneficial, with standards rooted in science.

What are your plans for a Free Trade Agreement with the UK that includes more market access for U.S. farmers and ranchers?

Answer. As part of the Biden-Harris Administration's focus on the Build Back Better agenda and supporting a worker-centric trade policy, it is currently reviewing the objectives of the negotiations with the United Kingdom that were begun under the prior Administration. Agricultural exports, including poultry and rice, are important U.S. exports and potential access to the UK and other markets will factor into decisions on how best to deepen our trade relationships with key partners.

Question 3. Historically, the European Union (EU) has been an important market for U.S. peanut production.

Unfortunately, since 2018 the US peanut industry has lost approximately $160 million in the EU market due to non-tariff trade barriers regarding additional aflatoxin testing protocols above and beyond the testing done in the US.

The U.S. peanut industry has engaged with both USTR and USDA and is eager to find a solution to this issue. What further steps need to be taken to remedy this situation?

Answer. We recognize the importance of the European market for U.S. peanut production, and the challenges that concern the industry. We will continue to work closely with USDA and the industry to address this issue, including pursuing a solution with the Europeans.

QUESTIONS SUBMITTED BY SENATOR SHELLEY MOORE CAPITO

Question 1. Last week, I joined Senator Portman and a group of 38 bipartisan Senators to echo support for the Administration to continue efforts to address unfair Chinese trade practices while also restarting the Section 301 Tariff Exclusion Process. Doing so would provide domestic manufacturers with much needed relief.

1a. Can you provide and update on where things stand on this matter at USTR?

1b. When can manufacturers expect this process to be up and running?

Answer. At the request and recommendation of Senator Portman, I have committed to doing a top-to-bottom review of our China trade policy, with the goal of making our trade policies more effective and more strategic. As part of that review, we are looking at the China 301 tariffs and the exclusions process. Our plan to re-examine the tariffs provides us with important opportunities to craft thoughtful and effective responses to China's unfair trade practices.

Question 2. Last summer, it was brought to my attention that Jingye Group, a Chinese steel and iron manufacturer, had purchased British Steel—a steel manufacturer with facilities across the UK and Europe. As we continue to place focus on China's trade practices, I worry that acquisitions such as these could lead to the circumvention of U.S. trade law.

2a. Are you aware of this matter or similar instances?

Answer. USTR is aware of the acquisition of British Steel by Jingye Group and is monitoring this development closely. We will continue to raise concerns about the foreign investment activities of Chinese steel producers in fora such as the OECD Steel Committee and the Global Forum on Steel Excess Capacity, and bilaterally with those countries affected. In addition to this acquisition, we are also aware of recent cross-border and joint venture investments by Chinese steel enterprises in the UK and in countries such as Indonesia, Malaysia, the Philippines, Cambodia, and others. USTR will continue to consult with domestic stakeholders and work closely with like-minded partners, such as the UK and the EU, to find creative and effective responses to prevent further job and technology losses in sectors China is targeting.

2b. Can you commit to addressing these concerns during your continued negotiations with the United Kingdom?

Answer. The Administration is currently reviewing the objectives of the negotiations with the United Kingdom. We intend to work closely with the UK and other

like-minded partners to address excess capacity and market distortive measures through all the appropriate mechanisms and engagements we have with these partners.

Question 3. As a result of the pandemic and indefinite work from home policies, many Americans are considering the option to move to rural areas, like my State of West Virginia. However, lumber prices have more than tripled since last spring and are further increased by tariffs on Canadian softwood lumber.

3a. Is your team working on a new softwood lumber agreement with Canada?

3b. Will you make this a priority?

Answer. I discussed softwood lumber with my Canadian counterpart in our first USMCA FTC meeting and we agreed to keep in touch on the issue. The United States is open to resolving our differences with Canada over softwood lumber, but it would require addressing Canadian policies that create an uneven playing field for the U.S. industry. Unfortunately, to date, Canada has not been willing to address these concerns adequately.

Question 4. The Phase One Agreement with China addressed key trade imbalances between our two nations, such as forced tech transfer, IP theft, and currency manipulation.

4a. Do you intend to continue to build upon the framework of the Phase One deal to further solidify China's commitment to uphold the changes agreed upon?

Answer. With regard to the Phase One Agreement, we are committed to ensuring China's implementation of its obligations under the Agreement. We will continue to make use of and push the tools that we have for the benefit of U.S. farmers, ranchers, manufacturers, service suppliers, and small businesses.

The Administration is currently engaged in a comprehensive and coordinated review of U.S. strategy for addressing the many challenges that China poses, both for the United States and the world. USTR is actively participating in the development of this strategy, which will encompass all policy areas, including trade policy.

4b. What additional areas do you believe should be addressed/targeted?

Answer. With regard to the Administration's trade policy toward China, USTR is currently conducting a top-to-bottom review of the U.S.-China trade relationship, with a view toward ensuring that our trade policy supports and complements the Administration's broader China strategy. A key focus of this effort is on China's non-market and unfair policies and practices that are inadequately disciplined by the WTO or the Phase One Agreement, such as industrial subsidies, excess capacity, forced technology transfer, and State-owned enterprises. The results of this review, as well as our ongoing engagement with allies and like-minded partners, with whom we share values and interests, will inform our thinking of how we proceed.

QUESTIONS SUBMITTED BY SENATOR JOHN KENNEDY

Question 1. As you know we are still under a declared national public health emergency and we continue to have supply chain challenges particularly related to Personal Protective Equipment (PPE). Recently United States Customs and Border Protection seized imports from the world's largest rubber glove manufacturer, Top Glove in Malaysia, for sufficient evidence of its use of forced labor. This underscores the need for domestically manufactured PPE. We need to stand up and support US-based PPE manufacturing and as part of that provide Section 301 exclusions for essential manufacturing equipment and raw materials needed to establish and support domestic PPE production.

1a. Given the ongoing public health emergency and resulting need for PPE, would you consider having a separate fast-track Section 301 exclusion process for essential manufacturing equipment and raw materials needed to establish and support domestic PPE production?"

Answer. In March 2020, USTR established a process in which U.S. stakeholders could provide comments on possible modifications to remove the additional 301 duties from medical-care products. Medical-care products included products directly used to treat COVID–19 or to limit the outbreak and products used in the production of needed medical-care products. Based on the comments received, in December 2020, USTR published a list of exclusions for products to combat COVID–19. Currently, these exclusions are scheduled to remain in effect until September 30, 2021.

As you are aware, I have committed to doing a top-to-bottom review of our China Trade policy. As part of that review, we are reviewing the China 301 tariffs and the exclusions process, including the exclusions for products to combat COVID–19.

Question 2. Do you believe China is a "developing country?"

Answer. In the World Trade Organization, Members are currently permitted to self-declare as "developing countries" to take advantage of certain flexibilities in WTO rules. However, WTO Members recognized at the time of China's accession to the WTO that China should not be able to avail itself of flexibilities afforded to other developing countries. China was permitted to negotiate only a limited set of flexibilities at the time of its accession. The United States believes that China is an advanced, wealthy and influential Member of the WTO that can negotiate the flexibilities it may need in any future WTO negotiation, and that China should not be able to avail itself of any blanket flexibilities reserved for developing countries.

Question 3. Do you believe, like the last administration declared, that China is committing crimes against humanity towards the Muslim Uyghur population?

Answer. Secretary of State Blinken has made clear that China is committing genocide and crimes against humanity. In the 2020 Country Reports on Human Rights Practices, issued on March 30, 2021, the State Department declared that "[g]enocide and crimes against humanity occurred during the year against the predominantly Muslim Uyghurs and other ethnic and religious minority groups in Xinjiang." I agree with this assessment. China should immediately end these atrocities and respect the human rights of Uyghurs and all others across China.

Question 4. How do you intend on preventing the import of goods made with forced labor and the export of technologies used for repression?

Answer. I commit to utilizing the full range of trade tools at my disposal to combat forced labor and the export of technologies used for repression. This includes ensuring President Biden's Build Back Better agenda promotes a trade agenda that respects the dignity of work and pursues a fair, rules-based international trading system and does not undermine our core values. A fair international trading system is one in which individuals are not forced to work against their will, and products made out of forced labor do not enter the global trading system. I will champion trade policies that support good jobs that are protected by robust and enforced labor laws, including laws that prohibit forced labor in traded goods.

One recent example of our commitment is that in the first Free Trade Commission of the United States-Mexico-Canada Agreement (USMCA), held just this month, the United States, Mexico, and Canada discussed our shared obligation to ensure the Agreement's forced labor import prohibition and continued our collaboration to bolster each other's efforts in this regard. The USMCA includes a ground-breaking forced labor provision that obligates all Parties to "prohibit the importation of goods into its territory from other sources produced in whole or in part by forced or compulsory labor, including forced or compulsory child labor."

In addition, USTR uses the worker rights eligibility criteria of its trade preference programs to address labor issues, including the elimination of forced labor. For example, we recently closed a review of Uzbekistan's GSP eligibility after trade engagement on this issue encouraged the Uzbek government to eliminate the systematic use of forced labor in its annual cotton harvest. Utilizing our trade tools to combat forced labor is also a part of the White House's National Action Plan to Combat Human Trafficking. Our agency is an active member of the President's Interagency Task Force on Trafficking and the Forced Labor Enforcement Task Force, as well as various other interagency committees to coordinate efforts to combat forced labor.

USTR is also engaged with other agencies to ensure that the U.S. technology is not exported for use in repression overseas. We are active participants in discussions over the full range of existing tools, including investment screening and export controls such as the Entity List and the Military End-User (MEU) List maintained by the Department of Commerce.

Question 5. China's fallen back on its word to purchase $468 billion worth of U.S. goods, as they agreed to during the "Phase One" agreement. How do you intend on holding them to their word?

Answer. China's purchases shortfall is certainly in our sights. These commitments are important to the United States economically, but they are also important as commitments that China undertook of its own free will to make. We will work to ensure that these commitments are implemented, and where they are not, we will utilize the tools available, including those under the Phase One Agreement, to stand

up for U.S. farmers, ranchers, manufacturers, service suppliers, and small businesses.

Question 6. Prior to the lack of quorum under the Trump Administration the World Trade Organization faced significant criticism because of its sluggish dispute settlement process.

6a. Is the administration committed to maintaining an active role in reforming and upgrading the World Trade Organization, or does it intend to allow for the revival of the dysfunctional appellate body?

Answer. The Biden Administration shares longstanding bipartisan, bicameral concerns about the WTO's dispute settlement system. Dispute settlement overreaching, including by the Appellate Body, undermines support in the U.S. for the international trading system. The Administration will actively engage in efforts to reform the WTO, including dispute settlement, in order to build a more fair trading system and support the WTO as a forum for discussion and negotiations where countries come together to find joint solutions to common problems.

Question 7. Do you intend to purse Free Trade Agreement talks with Iceland?

Answer. The Biden Administration highly values our economic and security relationship with Iceland. However, as the President has made clear, we will not be engaging in new trade agreements before we make the necessary investments at home.

Question 8. Do you believe China is actively trying to build a presence in the artic?

Answer. Yes. China is actively trying to build a presence in the Arctic and has publicly announced its intent to increase its investments there, including through the development of research and observation platforms, arctic shipping routes, and enhanced operational capabilities, such as icebreakers. In addition, China has sought to create economic leverage and gain a foothold and in the region through direct investments in land and infrastructure. Beijing includes the Arctic region in its "Polar Silk Road," as part of President Xi's signature Belt and Road Initiative.

Question 9. Is it a priority of the administration to enhance security cooperation in the artic to combat increased Chinese and Russian influence?

Answer. Yes. We are working with and through our allies and partners to enhance U.S. presence and influence in the Arctic. The United States continues to participate in Arctic exercises and training to deepen military interoperability with allies and partners. The Administration currently discusses security and defense challenges in the High North through NATO, bilateral dialogues, and regional consultations with like-minded Arctic states. We intend to work with Arctic states to uphold international law and standards in the long-standing spirit of cooperation among Arctic nations in the region. We will not hesitate to hold any state accountable for actions that run counter to these commitments, or the interests of the United States, its allies and partners.

Question 10. Do you intend to purse Free Trade Agreement talks with New Zealand?

Answer. The Biden Administration highly values our economic and security relationship with New Zealand. We are working in close connection with New Zealand on trade issues as it hosts and chairs APEC (Asia Pacific Economic Cooperation). However, as the President has made clear, we will not be engaging in new trade agreements before we make the necessary investments at home.

Question 11. Will you prioritize our expanding trade relations with both countries?

Answer. Yes, our trade relations with both countries are important priorities. We regularly engage Iceland and New Zealand bilaterally, including through our Trade and Investment Framework Agreements (TIFA), to explore ways to expand and enhance our trade ties.

Question 12. Given recent claims by the Mexican government that Mexico's hydrocarbons resources are not covered under USMCA, can you state your position regarding how hydrocarbons should treated with regard to USMCA?

Answer. Our view is that the USMCA applies to Mexico's energy sector; this is very clear in the USMCA text.

Question 13. The natural gas and oil industry has experienced significant regulatory challenges in Mexico by Mexican regulators attempting to complicate and delay investor operations in Mexico to the advantage of PEMEX, Mexico's state-owned oil company.

13a. Can you detail how you and USTR would ensure that American and other foreign investors in Mexico are treated fairly and ensure the USCMA provisions on fair treatment will be enforced?

Answer. We have raised our concerns with Mexico's treatment of U.S. energy investors frequently, including during bilateral meetings with Mexico on May 17 and during the inaugural meeting of the USMCA Free Trade Commission on May 18.

Question 14. Investor State Dispute Settlements or ISDS, is an integral part of USMCA and many other FTA's that the U.S. has around the world.

14a. Can you please state how you and USTR would prioritize the enforcement of ISDS under USMCA and the inclusion of strong ISDS provisions in other FTA's the U.S. may pursue?

Answer. I am committed to enforcing the USMCA agreement, including the provisions in the Investment Chapter. Regarding other FTAs, President Biden has stated that he does not believe corporations should get special tribunals in trade agreements that are not available to other organizations and that he opposes the ability of private corporations to attack labor, health, and environmental policies through the investor-state dispute settlement.

Question 15. Can you please state your view on how the current Sec. 301 tariffs on imported goods from Mexico and Sec. 232 tariffs on steel and aluminum will be handled under your leadership at USTR?

Answer. I have committed to doing a top-to-bottom review of our China trade policy, with the goal of making our trade policies more effective and more strategic. As part of that review, we are looking at the China 301 tariffs and the exclusions process. Our plan to re-examine the tariffs provides us with important opportunities to craft thoughtful and effective responses to China's unfair trade practices.

With respect to the section 232 tariffs on steel and aluminum, we have a very significant problem in the global steel and aluminum markets that is driven primarily by overcapacity in China and other countries, particularly in Southeast Asia and the Middle East. The Administration is working to address the market distorting measures in economies that have led to overcapacity in the global steel and aluminum industries and the resulting national security threats.

In addition to the thorough review of the section 232 measures and product and country exclusions that is currently underway by the Department of Commerce, the Administration is also consulting closely with various domestic stakeholders and like-minded partners around the world sharing similar national security interests to address market distorting measures in non-market economies that pose a serious threat to the market-oriented U.S. steel and aluminum industries and the workers in those industries. On May 17, 2021, the United States and the European Union (EU) announced the start of discussions to address global steel and aluminum excess capacity and the market distortions that result from this excess capacity. The Administration is committed to working with the EU and other like-minded partners to address excess capacity, ensure the long-term viability of our steel and aluminum industries, and strengthen our democratic alliance.

Question 16. Natural gas and LNG have been instrumental in reducing GHG emissions around the world and have served as a strong enticement to help the U.S. achieve policy goals and partnerships with other countries. That leverage should only be strengthened and improved in coming years to maintain and grow U.S. leadership abroad.

16a. Can you please elaborate on how USTR under your leadership will support and encourage growing US energy exports, particularly that of LNG around the world?

Answer. USTR is committed to the Biden-Harris Administration's whole-of-government approach to reduce GHG emissions and reach our net zero economy objectives. USTR will work hard to ensure all U.S. exports are competing on a level playing field in the global market.

QUESTIONS SUBMITTED BY SENATOR BILL HAGERTY

Question 1. The price of building or renovating a home has recently sky-rocketed, and demand for lumber has reached record highs. Lumber futures for delivery in May 2021 are at an all-time high and roughly four times the typical price for this time of year.[1] Forestry in Tennessee provides more than 98,000 jobs and has an annual economic impact of more than $24 billion.[2] Most of Tennessee's lumber production has been hardwood lumber.[3] The U.S. hardwood lumber industry relies heavily on exports; over the last decade, China has imported about a quarter of all boards produced by U.S. hardwood sawmills.[4] These exports of U.S. hardwood have an effect on reducing the massive trade deficit with China. China has extended the exclusion of tariffs on U.S. hardwood, but that exclusion is set to expire on September 16, 2021.

1a. What is USTR doing to ensure our continued ability to export Tennessee lumber to countries like China?

Answer. During meetings held under the Phase One Agreement to review China's implementation progress, the U.S. side has frequently pressed China to increase the pace of its purchases of U.S. goods. At times, the U.S. side has also raised concerns related to China's tariff exclusion process. With regard to hardwood lumber, as you have noted, the blanket exclusion for this product expires on September 16, 2021. Given China's past practice regarding extensions of existing exclusions, we do not expect China to extend the blanket exclusion for hardwood lumber until shortly before its expiration.

Question 2. I am very concerned about threats that Americans faces from the Chinese Communist Party (CCP) and their persistent attempts to steal American business secrets and proprietary information. Far too many nations and international organizations refuse to hold the CCP accountable.

2a. Does the Biden Administration and USTR have an overall strategy to challenge China's aggressive and unfair trade efforts around the world?

2b. What role will your office play in the Administration's broader strategy toward China?

2c. Are you confident that other countries will join our efforts? What will it cost the United States to get other countries onboard?

2d. How is USTR approaching China's compliance with the U.S.-China Phase One Agreement?

Answer. The Administration is engaged in a comprehensive and coordinated review of U.S. strategy for addressing the many challenges that China poses, both for the United States and the world. USTR is actively participating in the development of this strategy, which will encompass all policy areas, including trade policy.

With regard to the Administration's trade policy toward China, USTR is currently conducting a top-to-bottom review of the U.S.-China trade relationship, with a view toward ensuring that our trade policy supports and complements the Administration's broader China strategy. A key focus of this effort is on the many harmful and unfair trade policies and practices pursued by China that currently evade discipline by WTO rules.

The United States has shared values and interests with like-minded partners across the world. Addressing China's non-market and unfair practices is critical for U.S. and our partners' workers and citizens, and for the world trading system. We need to be creative and find effective responses, to prevent further job and technology losses in sectors China is targeting.

The Phase One Agreement is the agreement that we have, and we are committed to ensuring China's full implementation of its obligations under the Agreement. We will continue to make use of and push the tools that we have for the benefit of U.S. farmers, ranchers, manufacturers, service suppliers, and small businesses.

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[1] Ryan Dezember, *Lumber Prices Break New Records, Adding Heat to Home Prices,* WALL ST. J. (May 3, 2021), https://www.wsj.com/articles/record-lumber-prices-lift-sawmills-while-homeowners-do-it-yourselfers-pay-up-11620034201.

[2] Andrew Muhammad & Adam Taylor, *Implications of COVID–19 on Tennessee Exports of Forest Products,* UT EXTENSION INST. OF AGRICULTURE, at 3, https://extension.tennessee.edu/publications/Documents/W913.pdf.

[3] *See, e.g.,* Rhonda M. Mathison & Doug Schnabel, *Tennessee's Timber Industry—An Assessment of Timber Product Output and Use, 2007,* USDA—FOREST SERVICE, https://www.srs.fs.usda.gov/pubs/rb/rb_srs152.pdf.

[4] Peter Buxbaum, *China Trade and COVID–19,* AM. J. OF TRANSPORTATION (May 26, 2020), https://ajot.com/premium/ajot-china-trade-and-covid-19-a-one-two-punch-hitting-us-hardwood-producers.

SUBCOMMITTEE RECESS

[Whereupon, at 10:48 a.m., Wednesday, April 28, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

WEDNESDAY, MAY 26, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:00 p.m., in room SD–124, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chairwoman) presiding.

Present: Senators Shaheen, Reed, Van Hollen, Moran, Murkowski, Collins, and Braun.

DEPARTMENT OF COMMERCE

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. Thank you very much. Our new Commerce Secretary is here today to talk about the Department of Commerce and their budget. And I also want to thank you again for coming to New Hampshire. I understand it was your first official visit, and so it was very nice to have you in New England, close to home, in the Granite State.

The Department of Commerce promotes job creation and economic growth by ensuring fair trade, providing the data necessary to support commerce, and fostering innovation by setting standards and conducting foundational research and development. To achieve these important goals the Department employees nearly 50,000 people located in all 50 States and every U.S. territory, and actually dozens of countries around the world.

Among these employees are Nobel Prize winners, statisticians, trade experts, and patent attorneys. This year, the President's fiscal year 2022 budget request for the Department is $11.4 billion.

And that is a 28 percent increase compared to the fiscal year 2021 enacted level for the Department. This top line proposal builds off of the Department's ongoing work to spur American job growth in the wake of a devastating pandemic and economic recession.

To do so this budget includes a proposal to increase funding for the National Institute of Standards and Technology, NIST, by at least $400 million, an investment that would be a shot in the arm to bolster advanced manufacturing research, and manufacturing assistance programs to create good-paying American jobs.

The budget also proposes a historic investment in the National Oceanic and Atmospheric Administration to expand investments in climate research and improve community resilience to counter the effects of climate change. They also come at an inflection point for our planning.

Last month, for the first time in recorded history, the concentration of atmospheric carbon dioxide was measured at more than 420 parts per million, which is the halfway point on our path toward doubling preindustrial levels of carbon dioxide. And we know this milestone has been reached because of the work of NOAA's Earth System Research Laboratories, which are the world's gold standard in climate research.

I am also pleased that this budget request guarantees the Department's trade bureaus are sufficiently resourced and staffed to ensure a fair trade and U.S. competitiveness.

And on a lighter note, I want to thank you and Ambassador Tai for announcing the start of discussions with the European Commission to address global steel and aluminum tariffs. The Section 232 Tariffs have overwhelmed many New Hampshire businesses that are already reeling from the pandemic. So we were really pleased to see this move. And I look forward to hearing more about what the Department's strategy is regarding the tariffs.

On a separate topic, I want to congratulate the Census Bureau and its employees on executing the 2020 Decennial Census under unprecedented conditions. I am interested in hearing about the Department's plans for processing the redistricting data and whether the Department has any lessons learned from the 2020 census.

And finally, turning to the Economic Development Administration, businesses in New Hampshire and around the country are very eager to hear about the Department's plans for releasing the $3 billion provided under the American Rescue Plan. In New Hampshire, especially, the $750 million designated to assist community suffering from job losses in the travel and tourism and outdoor recreation industries.

So it is no exaggeration to say that the Department's responsibilities affect every facet of American life. And I look forward, very much, to your testimony today. Thank you for your willingness to appear before us.

I have a full statement that I will submit for the record.

[The statement follows:]

STATEMENT OF SENATOR JEANNE SHAHEEN

The Subcommittee on Commerce, Justice, Science and Related Agencies will come to order.

Good afternoon, everyone, and welcome to today's hearing to review the President's fiscal year 2022 funding request for the Department of Commerce. Our witness today is Secretary Gina Raimondo.

Secretary Raimondo, it's great to see you again. I want thank you for visiting New Hampshire last month. I hope your first official visit as secretary was the first of many you'll make to the Granite State.

The Department of Commerce promotes job creation and economic growth by ensuring fair trade, providing the data necessary to support commerce and fostering innovation by setting standards and conducting foundational research and development. To achieve these important goals, the department employs nearly 50,000 people located in all 50 States, every U.S. Territory, and dozens of countries around the world. Among these employees are Nobel Prize winners, statisticians, trade experts, and patent attorneys.

In order for the Department to carry out its critical missions, Congress—and in particular, this subcommittee—must ensure that it has sufficient resources.

To that end, the fiscal year 2021 omnibus spending bill included $8.9 billion for the Department of Commerce. I'd like to thank Senator Moran and his staff for working in a bipartisan fashion to get that funding across the finish line.

This year, the President's fiscal year 2022 budget request for the Department of Commerce is $11.4 billion, a 28 percent increase compared to the fiscal year 2021 enacted level for the Department. While we await the release of the President's full budget request this Friday, it is clear that after 4 years of inadequate requests, this bold topline proposal builds off of the Department's ongoing work to spur American job growth in the wake of a devastating pandemic and economic recession.

To do so, this budget includes a proposal to increase funding for the National Institute of Standards and Technology (NIST) by at least $400 million.

This investment would be a shot in the arm for the U.S. economy, bolstering advanced manufacturing research and manufacturing assistance programs to create good-paying American jobs. These programs support small- and medium-sized manufacturers in New Hampshire and throughout the country, boosting American competitiveness and strengthening domestic supply chains.

The budget also proposes a historic investment in the National Oceanic and Atmospheric Administration (NOAA) to expand investments in climate research and improve community resilience to counter the effects of climate change. These investments are crucial to support New Hampshire's seacoast and fisheries.

They also come at an inflection point for our planet: last month, for the first time in recorded history, the concentration of atmospheric carbon dioxide was measured at more than 420 parts per million.

This grim milestone marks the halfway point on our path toward doubling preindustrial levels of carbon dioxide.

How do we know this milestone has been reached? Because of the work of NOAA's Earth System Research Laboratories, which are the world's gold standard in climate research. NOAA truly represents the tip of the spear in our fight against climate change, and this budget supports their mission.

New Hampshire is an exporting State, and the Department plays a crucial role in opening up new markets for my State's small businesses, so I am pleased that this budget request guarantees the Department's trade bureaus are sufficiently resourced and staffed to ensure fair trade and U.S. competitiveness.

On a related note, I am also pleased that, last week, you joined Ambassador Tai in announcing the start of discussions with the European Commission to address global steel and aluminum capacity. The Section 232 tariffs have overwhelmed many New Hampshire businesses already reeling from the pandemic, so this move is encouraging. Today we look forward to learning more about the Department's strategy regarding the tariffs.

Now, on a separate topic, I want to congratulate the Census Bureau and its employees on executing the 2020 Decennial Census under unprecedented conditions. The constitutionally-required decennial count has outsized implications for towns, cities, counties, and States across our country, directing apportionment and more than $675 billion in Federal formula funding every year.

I am interested in hearing about the Department's plans for processing the redistricting data and whether the Department has any "lessons learned" from the 2020 Census.

Finally, turning to the Economic Development Administration, just last week, EDA announced a $300,000 CARES Act grant to help promote the Monadnock Region and facilitate economic growth—part of the $1.5 billion provided to EDA in the CARES Act. Businesses in New Hampshire and around the country are also eager to hear about the Department's plans for releasing the $3 billion provided under the American Rescue Plan, particularly the $750 million designated to assist communities suffering from job losses in the travel, tourism, and outdoor recreation industries.

Secretary Raimondo, I have only scratched the surface of the many matters we have to discuss. It's no exaggeration to say that the Department's responsibilities affect every facet of American life, so I very much look forward to your testimony here today. Thank you for your willingness to appear before us.

With that, I now would like to recognize the CJS Subcommittee Ranking Member, Senator Moran, for his opening remarks.

Senator SHAHEEN. And now I would like to recognize the subcommittee Ranking Member, Senator Moran, for his opening remarks.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Chair Shaheen, Thank you.

And Secretary Raimondo, I welcome you to the CJS Subcommittee. I appreciate the relationship, the conversations that we have had since—before your confirmation and look forward to working with you.

As we continue to recover from this pandemic and look to continue rebuilding the economy, the Department of Commerce has a direct impact on the strength and sustainability of our communities and our local businesses.

For example, I recently announced a nearly $4 million Economic Development Administration award to the City of Salina, Kansas, that will support infrastructure improvements to allow for the expansion of a nearby manufacturing facility. EDA is hugely important to economic activities in Kansas and across the country.

Certainly, the work- and school-from-home model driven by the pandemic has created renewed emphasis on the Commerce Department's role in closing the digital divide and ensuring that all people in all communities have access to high-speed connectivity on the Internet. It is these types of core programs that I believe should be prioritized in this year's budget.

The budget request before us today proposes $11.4 billion for the Commerce Department, which is $2.5 billion, or 28 percent above the enacted amount. This is a significant increase.

I was pleased to see the initial details of the 2020 budget. When I saw those I noticed that there would be an increase in support for—and I am pleased by this—cutting-edge research and development that will help maintain U.S. leadership in technology, manufacturing, and science, an accurate and timely weather prediction and forecasting that will help better protect life and property.

However, I do have questions about how the budget proposal balances new investments in operations versus the investments in support programs and infrastructure.

For example, the budget proposes for—proposal calls for large, target investments in scientific research in both NOAA and NIST, something which I generally support. However, the proposal makes no mention of any matching investments in scientific facilities or related infrastructure.

Madam Secretary, we talked during your confirmation hearing about the need to invest in the Department's scientific infrastructure. And I look forward to working with you on this, what I think is a very important issue.

Similarly, trade policy and trade enforcement has never been more important, but the Departments trade-related agencies seem to me to have been more or less an afterthought in the budget request. Status quo trade promotion and trade enforcement is insufficient. Trade is a priority, and I hope the Biden administration will begin to prioritize it as such.

In the last few months, the Department of Commerce's cybersecurity shortcomings have been on display. We must make the necessary investments to protect our digital infrastructure. And I am interested to hear how the administration proposed investment in cybersecurity will address the Department of Commerce's needs.

I thank you again for being here. And I look forward to hearing your views on these matters, and others, during today's hearing.

Senator SHAHEEN. Thank you very much, Senator Moran.

I will now turn it over to you, Secretary Raimondo.

STATEMENT OF HON. GINA RAIMONDO, SECRETARY, DEPARTMENT OF COMMERCE

Ms. RAIMONDO. Thank you. Good afternoon. Thank you all for your time. And it is nice to see you, albeit very far away.

So thank you Chair Shaheen, and Ranking Member Moran, and Members of the subcommittee, and thank you for this opportunity to talk about the President's proposed fiscal year 2022 Discretionary Request for the Department of Commerce.

President Biden's discretionary request includes, as you have both just said, $11.4 billion for the Department of Commerce, a 28 percent increase above the 2021 enacted level. And with these funds we will maintain existing programs and activities, and also make critical investments necessary to boost the Nation's ability to address the crises we face today.

This year's appropriations process arrives during one of the most difficult periods in the Nation's history. And as the Chairwoman said, the Commerce Department has an impact across all of these crises, and indeed impacts every American family.

We, in the Biden administration, believe America faces four simultaneous crises of unprecedented scope. First, a once-in-a-generation pandemic that has already claimed more than a-half-a-million American lives. Second, a punishing economic crisis that has left nearly 10 million Americans out of work. Third, a National reckoning on racial inequity; and this week, of course, we are particularly focused on that with the 1-year anniversary of George Floyd's passing. And fourth, the growing threat of climate change to the American people and economy.

As we have said, the Department of Commerce is playing an integral role in addressing each of these crises. At NIST researchers developed a way to increase the sensitivity and accuracy of the common swab test for COVID–19. EDA has already awarded more than a billion dollars in grants to help communities and businesses across the country recover from the economic crisis. MBDA enabled technical assistance programs that help minority business enterprises execute more than $7.9 billion in transactions in 2020.

And NOAA continues to save lives and property by providing early-warning systems and decision support tools to avoid the most devastating impacts of extreme weather events, which we all know are becoming more and more frequent.

I am proud of the work the Department's doing to address these crises. But I think, like all of you, I am very cognizant of the work and challenges that remain.

President Biden's discretionary request puts forward investments to do just that, to enable us to meet the needs of these simultaneous crises.

And I look forward to working with each and every one of you in the coming year to fund Commerce's programs with the appropriate level investment in the following key initiatives:

First, as the Chairwoman said, to support American manufacturing by funding for the Department's most effective manufacturing programs, which are the MEP program, and the Manufacturing Innovation Institutes and to spur research and technological innovation by expanding scientific and technological research at NIST, which the Ranking Member mentioned.

Revitalizing former energy communities by supporting the EDA's locally driven economic development projects in communities across the Nation, including its assistance to the—Assistance to Coal Communities Program.

Improving weather and climate forecasting by investing in the next generation of NOAA's satellites, investing in climate science and research by ensuring NOAA has the tools it needs to expand climate observation, forecasting, and research.

And strengthening American competitiveness and security by ensuring Commerce's International Trade Administration has the staff and resources it needs to defend the United States' businesses and workers by addressing unfair trade practices and barriers, strengthening enforcement of U.S. trade laws, and enhancing oversight of foreign government compliance with trade agreements.

So we clearly have our work cut out for us at the Commerce Department. And I look forward to working collaboratively with each of you and the other Members of this subcommittee to stand the economy back up, and make sure that we have an economy that works for all by creating jobs and growth that support American businesses and workers now and into the future.

So thank you for having me. And of course, I welcome your questions.

[The statement follows:]

PREPARED STATEMENT OF HON. GINA M. RAIMONDO

Chair Shaheen, Ranking Member Moran, and Members of the subcommittee, thank you for this opportunity to discuss President Biden's Fiscal Year 2022 Discretionary Request for the U.S. Department of Commerce. These priorities build upon the important investments you enacted in 2021 and I am grateful for your steadfast support of the Department.

As you know, the Department of Commerce is responsible for promoting job creation, supporting and overseeing international trade, and providing economic, environmental, and scientific information needed by businesses, citizens, and governments. President Biden's Discretionary Request includes $11.4 billion for the Department of Commerce, a 28 percent increase above the 2021 enacted level. With these funds we will maintain existing programs and activities and make critical investments necessary to boost the Nation's ability to address the crises we face today.

This year's appropriations process arrives during one of the most difficult periods in the Nation's history. America faces four simultaneous crises of unprecedented scope: a once-in-a-century pandemic that has already claimed more than half a million American lives; a punishing economic crisis that has left nearly 10 million out of work; a national reckoning on racial inequity; and the increasing threat of climate change to the American people and economy. The Department of Commerce has been providing critical assistance to confront and address each of these crises. For example:

—The National Institute of Standards and Technology, or NIST, researchers developed a way to increase the sensitivity and accuracy of the common swab test for COVID–19, improving our understanding of the pandemic;

—The Economic Development Administration, or EDA, has already awarded more than $1 billion in grants to help communities and businesses across the country recover from the economic crisis and has another $3 billion in the pipeline;

—The Minority Business Development Agency, or MBDA, enabled technical assistance programs that helped minority business enterprises execute more than

$7.9 billion in transactions in 2020 and has additional programs in the works this year; and

—The National Oceanic and Atmospheric Administration, or NOAA, continues to save lives and property by providing early warning systems and decision-support tools to avoid the most devastating impacts of extreme weather events, many of which are increasing in frequency and intensity due to climate change.

I am very proud of the work the dedicated career employees at the Department do every day to address these crises. At the same time, I am also cognizant of the immense challenges that remain. To fully address these challenges, we must boost strategic investments to support American manufacturing, spur research and technological innovation, advance economic recovery in underserved communities, invest in climate science and research, improve weather and climate forecasting, and strengthen American competitiveness and security.

President Biden's Discretionary Request puts forward investments that do just that. I am confident that the request will address today's crises and help American businesses create well-paying jobs for American workers, allow American businesses of all sizes to compete on an equal playing field, and empower a more equitable economy.

I recognize that none of these investments or goals are possible without the support of the Congress and especially the Members of this Committee. I look forward to working with you all in the coming year to fund all of Commerce's programs, and increase investments in the following key initiatives:

Support American Manufacturing

Manufacturing has long been the backbone of our country and we must strengthen our manufacturing to move America forward. To ensure robust resurgence of American manufacturing and increase the security and resilience of our supply chain, the Discretionary Request more than doubles funding for the Department's most effective manufacturing programs: the Manufacturing Innovation Institutes Program (MII) and the Manufacturing Extension Partnership (MEP).

A Manufacturing Innovation Institute is a public-private partnership of companies, academia, state and local governments, and Federal agencies that co-invest in developing world-leading technologies and capabilities. The Discretionary Request calls for an additional $150 million for two new MIIs, one of which will help restore the United States as the global leader in the design and manufacture of semiconductors. It also calls for an additional $125 million for MEP. The MEP National Network consists of 51 MEP Centers located in all 50 states and Puerto Rico. The additional funds will enable them to strengthen domestic supply chains and help small and medium manufacturers improve their competitiveness.

Spur Research and Technological Innovation

Public investments in research and development lay the foundation for future breakthroughs that generate new businesses, jobs, and exportable goods. The Discretionary Request calls for $916 million, an increase of $128 million over the 2021 enacted level, to expand scientific and technological research at NIST. With this investment, NIST will spur research advances in climate-resilient building codes, computing, cybersecurity, artificial intelligence, quantum information science, biotechnology, and advanced manufacturing.

U.S. leadership in advanced communications requires commercial operators to have access to a full array of spectrum bands to share with Federal agencies. This Discretionary Request includes $39 million for advanced communications research at the National Telecommunications and Information Administration, or NTIA, to support the development and deployment of broadband and 5G technologies, by identifying innovative approaches to spectrum sharing, including research using the Federal Advanced Communications Test Site (FACTS) at NTIA's Table Mountain field site in Boulder, Colorado.

Advance Economic Recovery in Underserved Communities

Every American should have an equal chance to pursue their potential. Yet, for far too many Americans, this has never been within reach. The President's 2022 Discretionary Request calls for $70 million for MBDA to expand opportunities for minority-owned businesses and help eliminate barriers for minority-owned firms. The request also will elevate MBDA's position within the Department of Commerce and establish an Assistant Secretary for MBDA.

The Discretionary Request also will prioritize creating good jobs by revitalizing former energy communities. To spur economic revitalization and support energy workers, the request includes $84 million, an increase of $50 million over the 2021 enacted level, for EDA's Assistance to Coal Communities Program. These funds will

help ensure that communities most impacted by the transition to clean energy are not left behind. EDA's efforts are part of the POWER+ Initiative and complement other targeted investments across the Federal Government.

The Discretionary Request also includes $300 million for EDA to support locally driven economic development projects in communities across the Nation. These investments will enable local communities to establish a foundation for sustainable job growth, and build durable regional economies by funding projects that advance equity, support workforce education and skills training, enable business expansion and technology updates, support growth in exports and foreign direct investment, and address the climate crisis.

Invest in Climate Science and Research

Climate change is one of the greatest challenges of our time. Yet it is also an opportunity for economic growth and innovation. In the Discretionary Request, the Administration proposes a whole of government approach to address this challenge and harness this opportunity. NOAA climate science provides the data, tools, and information that are the foundation for both efforts. The Discretionary Request therefore includes $800 million for NOAA to expand climate observation, forecasting, and research so that NOAA can provide better data, information and tools to Federal agencies, States, Tribes, communities, and businesses across America to enable smart policy and decisionmaking. This investment will also improve community and coastal resilience by investing in modern infrastructure and funding competitive grants to help protect communities from the costly economic and environmental impacts of severe weather events and climate change. The increased resources will also support an expanded and improved drought early warning system.

Improve Weather and Climate Forecasting

Families, businesses, and State and local governments rely on NOAA's weather satellites and forecasts every day. When severe weather strikes, these forecasts can literally mean the difference between life and death in impacted communities. The Discretionary Request invests $2 billion, approximately $500 million more than the 2021 enacted level, in the next generation of satellites. With these additional resources, NOAA will be able to enhance its world-leading satellite observing systems by incorporating a diverse array of new technologies to improve data for weather and climate forecasts and provide critical information to the public. This data will allow for more informed decisionmaking that protects life and property, safeguards the economy, and supports the fight against climate change.

Strengthen American Competitiveness and Security

American businesses and workers can compete if we all play by the same rules. The 2022 Discretionary Request ensures Commerce's International Trade Administration has staff and resources it needs to defend U.S. workers by addressing unfair foreign trade practices and barriers, strengthening enforcement of U.S. trade laws, and enhancing oversight of foreign government compliance with trade agreements. It also provides additional staff and resources for the Bureau of Industry and Security to analyze export control and Entity List proposals, enforce related actions, and implement export controls.

* * *

I look forward to working with you to create an economy that works for all by creating jobs and growth that support American communities, businesses, and workers—now and in the future. I am happy to take your questions.

ITMS DISCUSSION

Senator SHAHEEN. Thank you very much, Madam Secretary.

I am going to begin by asking you about a Washington Post story that was reported on Monday morning, about the Department of Commerce Investigations and Threat Management Service, also called ITMS, which appears to have been acting outside of its legal authority.

They allegedly covertly searched Commerce employees' offices at night, ran broad keyboard searches of employees' emails, flagged the social media posts of private citizens, and a whole variety of

other things. I was particularly flabbergasted to see the investigative kit that was described that was used by that agency.

These allegations are very troubling, and it is my understanding that shortly after you were sworn in, ITMS was ordered to pause all criminal investigations, and on May 13 was ordered to suspend all activities after preliminary results of an ongoing review.

Can you talk about other steps that the Department has taken to address the problems at ITMS, and what you think the long-term outcome ought to be for that agency?

Ms. RAIMONDO. Yes. Well, first let me say, Senator Shaheen, that I share your deep disappointment, to say the least. I, upon entering the Department there were a number of surprises that I found, this one was the biggest and most unfortunate. And I commit to you to, personally, give my attention to this and make sure that we get to the bottom of what may have happened, and make sure we hold people accountable, and make any changes that are necessary on a go-forward basis to the way that we handle the operations of ITMS.

First of all, we stopped all investigations. Second of all, we have asked, we have directed that all agents turn in, to the Department of Commerce, their weapons. Third of all, I have directed our General Counsel to do a 90-day review, top to bottom, of everything that may have happened; individual actions, procedures, processes.

We are probably 30 days into that review. And what I will tell you is that I will commit to be very transparent with you and the other Members of this subcommittee as to what we find, any repercussions for any individuals that there may be, and any changes that we have to make.

But I will—I guess I would just mostly commit to you that I won't stand for that kind of behavior under my watch.

Senator SHAHEEN. Well, thank you. I am really pleased to hear that. And I hope that you will keep this subcommittee informed as your investigation unfolds, and as you come up with recommendations for how to address the situation going forward. Thank you.

Obviously, as you talked about in your opening statement, the Department has very—some very diverse missions that include essential functions, like weather forecasting, patents, trademarks, developing standards, conducting the census, and now with proposals like the American Jobs Plan, and the U.S. Innovation and Competition Act, which is currently on the floor of the Senate, there will be new missions and programs added to the Department, and the funding for these new programs are potentially four or five times bigger than the Department's regular discretionary appropriation.

So as you are thinking about the passage of this new U.S. Innovation and Competition Act, how are you looking at balancing the existing missions and the new requirements that would be placed on the Department?

UNITED STATES INNOVATION AND COMPETITION ACT

Ms. RAIMONDO. Thank you for the question. In this regard, I feel fortunate to have been a governor for 6 years, as you can relate to, because I have some experience as an executive managing a team and putting in place the team, and the process, and the accountability metrics to make sure that we can meet the mission.

Having said that, this is—this is like nothing the Commerce Department has ever seen. And so what I can tell you is we are already hard at work putting together our plans in anticipation of potentially receiving $52 billion for semiconductor supply chain, $1.5 billion for the O–RAN, additional monies for manufacturing.

We are, you know, putting in—and I would be happy to share any of this with all of you, it is preliminary, but I would welcome your feedback, down to the level of: what would the org chart look like? What is the kind of skills that we would need? Where would we attract folks? You know, making sure that we are able to implement, you know, as I said, in order to meet the mission.

I will say the Department has expertise in expanding. We do it every 10 years with the census. We have done a great job with the money received from the Rescue package, and the CARES Act. So it is not new to the Department to expand to meet the mission, but I am aware of how difficult this will be, and we are getting ready to do it.

Senator SHAHEEN. Well, I think we would welcome the opportunity to give feedback on any plans that you have, if that is helpful, and would appreciate that. Thank you very much.

Senator Moran.

COUNTERVAILING DUTIES ON LUMBER

Senator MORAN. Chairwoman, thank you.

Earlier this month, Madam Secretary, the chair and I sent you a letter expressing our concerns over record high lumber prices, and raised the concern about countervailing duties that are being imposed on Canadian softwood lumber imports. Last week the Department of Commerce increased—announced its intention to double those duties, beginning in November.

I believe that last week's announcement threatens even further challenges to those who are trying to figure out how to replace the deck on their house, or build a new home, or even find a home, already existing. Significant increases in the price of housing—comes at a great challenge for many Americans.

I guess my question at the moment is a simple one. In my view, we need to find a short-term solution if the countervailing duties are going to stay in place and are going to be increased. We can have that debate, but I don't know that you could change that outcome yourself anyway, but I would ask you, would you be willing to have the Commerce Department convene a discussion among Members of Congress, but perhaps Senator Shaheen and I, and maybe others, but really the industry; Senator Collins as well.

Would you be able to convene a gathering of industry and consumer folks so that we could have a conversation about what policy steps could be taken to try to reduce the price of lumber and its consequences on the housing market? That is the question.

Ms. RAIMONDO. Yes. So, to the question, it is an easy yes. In fact, I would be very pleased to do that, and I appreciate the suggestion, and we will follow up on it.

I will say a couple of things. First of all, I share your concern. I am in contact with the home builders. I talked to them over the weekend. And I have—I have heard you talk about it. I mean, this

is a real issue. You brought it up with me weeks ago, and I am hugely sympathetic to that. It is a real issue.

Some of it is due to just the supply chain, which is to say, many sawmills in America have gone out of business. And when, now during COVID, we see a huge spike in interest, demand for housing, we have a mismatch in our supply chain of that lack of supply to meet the increased demand.

You put your finger on something. Last week the Commerce Department put out a preliminary finding, I do want to emphasize that, as part of our administrative review to identify and quantify the amount of subsidy that the Canadian Government may be providing to soft lumber providers. So it is thus adding another layer of complexity to this problem.

I don't have an answer today. What I will tell you is, I am very focused on it. The White House and administration is very focused on it. I have been doing an enormous amount of stakeholder engagement as has my chief economist of Commerce. And, you know, I would be very pleased to host, as you say, some kind of a convening to get their feedback on what more we could do.

Senator MORAN. My notes indicate that it is called a Supply Chain Summit, which fits with exactly what you are talking about. And I think home builders, and realtors, and others need the opportunity to have some input, to see if we can find a solution. And I would ask that the Department work with me to kind of figure out what that should look like, and utilize our input as we try to organize that kind of summit.

Ms. RAIMONDO. Yes. We will do it.

Senator MORAN. Great. I would also indicate that I have had this conversation with the trade ambassador at USTR, which puts us back to negotiating an agreement with Canada. And it may be useful to have USTR in the room at the same time, perhaps, so they can provide some education or information, but more importantly to me. So perhaps we can create some impetus to get something accomplished in those negotiations.

Ms. RAIMONDO. Yes. So the bad news is, we are where we are right now. The silver lining could be that we use this as an opportunity to all get around the table, including USTR, to find a long-term solution with Canada. And that I would be very interested to dig into.

DEPARTMENT OF COMMERCE DIGITAL INFRASTRUCTURE

Senator MORAN. I have 31 seconds left, so I will ask quickly. The increasing prevalence of cyber attacks, in my view, makes it imperative for the Department to better protect, nothing here that is new, it needs to protect its digital infrastructure and its operating systems. How does the Commerce Department's budget fiscal year 2022 request address those needs? And to the extent that your answer may include that funds will be utilized through the Technology Modernization Fund, could you speak to how you understand that might work?

Ms. RAIMONDO. Okay. So since we are out of time, I would be happy to follow up further. But, listen, clearly you are right. We were part—we were significantly impacted by Solar Winds, and we

have already started to invest in our systems to improve our—reduce our cyber vulnerability.

One of the President's initiatives, which we will, of course, be taking on, is that every software vendor that does business with the Federal Government is going to have to have enhanced cyber standards, which will benefit our department and all departments.

And although the details of the President's budget won't be out until, you know, later this week, it is my understanding that there will be additional money for Commerce to do exactly what you are talking about, which is to enhance our IT systems.

Senator MORAN. I would only highlight for you, Madam Secretary; that the Technology Modernization Fund results from legislation that I authored, and it was designed to create opportunities for departments and agencies to utilize resources in advance of a problem to replace their legacy technology systems.

And I would be interested to—I would not necessarily expect you to have an answer today, but I would be interested in knowing. My understanding is that that fund may be utilized, or maybe money put into that fund for purposes that we are talking about today. And I am interested in making sure I understand——

Ms. RAIMONDO. Got it.

Senator MORAN [continuing]. How the plan is intended. Thank you.

Ms. RAIMONDO. Got it. I will get back to you. Thank you.

Senator SHAHEEN. Thank you, Senator Moran.

Senator Reed.

RETURN ON INVESTMENT OF PUBLIC FUNDS

Senator REED. Well, thank you very much. And welcome Madam Secretary.

As we have discussed, we are currently considering the $50 billion CHIPS for America Fund. You will supervise that fund. And working with Ranking Member Moran, we are proposing an amendment that would give you discretionary authority to use warrants as a way to recoup some of the funds that we are extending to these companies in the future.

We have had great success with warrants. The TARP funding of the—with respect to the banks, earned us about $10 billion, and the CARES Act with respect to the airlines based on yesterday's stock prices, would yield us a billion dollars. And I think it also would give us, and give the American people a sense that we are getting something from our investment. And, given your experience as a venture capitalist, as well as the treasurer of the State of Rhode Island and a governor, could you, comment upon whether this would be useful?

Ms. RAIMONDO. Mm-hmm. Thank you for the question. I think it is a very good idea. I think as one of the tools that we would have at the Commerce Department, it could have great utility. As you say, it was very successful in TARP, it was very successful with the airlines. It is obviously a bit different now than with TARP, at that time the financial services companies were in crisis and were probably a bit more willing to give whatever it would take than the semiconductor businesses would now.

Having said that, we are talking about putting $50 billion of taxpayer money to support large profitable companies, and it is absolutely reasonable to think that we should—we the American taxpayer—should have a share in the upside, should there be, you know, upside.

So as a tool in the toolbox, I think it is a very good idea. I think it is a good way to stick up for American taxpayers, as you say, in my case, as Commerce Secretary, I am very comfortable using that tool because I made a living doing that for more than a decade. So, you know, I would support as an option.

DEPLOYMENT OF NOAA SHIPS

Senator REED. Thank you very much, Madam Secretary. I want to thank you and NOAA for committing to create a home port facility at Naval Station Newport in Rhode Island. In fact, as you are probably aware, their new ship, Discoverer, is currently under construction in Louisiana, and now located there, but we have the capacity to accommodate, you know, several NOAA ships and make the operation of NOAA more efficient.

And I would—again, I want to thank Chairwoman Shaheen, and Ranking Member Moran, they have supported our efforts in this regard. But would you commit to work with us to see what we—that we can get a full deployment of NOAA ships as they have envisioned up at Newport?

Ms. RAIMONDO. Absolutely. Absolutely. And we are already—"we" being NOAA—is already working on the design and pre-work that is necessary for that. I think it is $15 million that—$15 million has already been awarded toward the total construction costs. And they are hard at work at the design and the permitting. And if we stay on the course that we are on, pending appropriations, a contract for construction should be awarded in fiscal year 2022.

COORDINATION OF FEDERAL CYBERSECURITY EFFORTS

Senator REED. Now I hope we can stay on that track. And just, as my colleagues have suggested, the cyber issue is ubiquitous, it is everywhere. NIST, which is part of the Department of Commerce, is one of the key roles. They coordinate closely with the DHS, cybersecurity information, security agency, but we are so disjointed in the Federal Government, for example, the regulation of pipelines in terms of their cyber is TSA. Now, I don't know how that happened.

But the moral of the story, I think, is we have to have a coordinated effort of every department. And I would hope, under the President's leadership, we could do that more effectively. And that is a comment as much as a question. So, thank you.

Ms. RAIMONDO. Yes. I support that.

I neglected to say with Senator Moran. The other thing that we are doing on cyber is within NIST in the President's budget is additional funding to study cyber. So I think advancing the science is going to be a benefit to all of us.

Senator REED. Thank you.

Senator MORAN. Thank you, Senator Reed.

Senator Collins.

Senator COLLINS. Thank you, temporarily, Mr. Chairman.

Senator MORAN. Why do you emphasize it?
Senator COLLINS. Thank you, Mr. Chairman.

SOFTWOOD LUMBER

Madam Secretary, welcome. It is great to have you here before us. I want to start by associating myself with Chairman Moran's comments about the countervailing duty and the antidumping case that is doubling the duties imposed on softwood lumber from Canada.

Just this morning I met with Maine homebuilders who were telling me about the doubling of the price of lumber, and this creates a real affordability problem. In fact, nationwide, since April of last year, the price of an average new single-family home increased by nearly $36,000, and that is a direct result of the increase of materials, lumber in particular.

I wrote to you where earlier this month about the softwood lumber agreement with Canada, it expired in 2015 and a new agreement is really needed to provide stability and predictability for industry on both sides of the border.

So my question is; is your team beginning to work on developing a new softwood lumber agreement with Canada?

Ms. RAIMONDO. Yes, we are. So as I was saying earlier, I share the concern. It is that this preliminary finding came at a really difficult time. And, you know, what that finding is, it was—it was part of an annual administrative review to quantify the amount of subsidy. And it could not have come at a worse time, as the homebuilders and the American people are in the teeth of struggling with increased prices. As I said, though, it is preliminary. The final determination will be at the end of September or more likely the end of November.

I would like to use this opportunity, and I have already started to talk with Ambassador Tai about: how do we seize this moment to come to a more lasting solution to a problem that has existed for 40-plus years.

And so I do plan to rejuvenate our efforts and see what might be possible.

RIGHT WHALE RULEMAKING

Senator COLLINS. Thank you. It won't surprise you that my next question has to do with the Right Whale Rulemaking. And let me start by thanking you for meeting with the Maine congressional delegation. I know, as a former coastal State governor, that you have a deep appreciation for how important our fisheries are to our economy and to our culture.

And Maine lobster men and women they have a long-standing commitment, not only to protecting the sustainability of the lobster, but also to protecting right whales. And over the years, they have made significant changes and sacrifices, when the science has warranted such actions in order to protect the right whale. And the result has been that there has not been a single right whale serious injury or mortality attributed to the Maine lobster fishery since 2002.

But on the other hand, NOAA's data show that from 2000 to 2018, there were 13 confirmed cases of right whales entangled in

Canadian snow crab gear. And since 2017, there have been at least seven right whales that have been killed by Canadian vessel strikes.

Is the Department beginning to discuss, with its Canadian fisheries counterparts and regulators, how to hold them accountable for their outsized role that is contributing to the population decline of the right whale? It is really unfair that the lobster industry in Maine is at risk of having to endure burdensome, perhaps unworkable new regulations when they are simply not the problem.

Ms. RAIMONDO. Yes. So, as I said to you, I really admire your advocacy in this regard. And the thing that stuck with me most from our conversations in this, is when you said to me, you should consider your—you should consider the fact that there are 5,000 small businesses that are in the lobster fishery in Maine.

And that stuck with me, which is to say five—putting 5,000 small businesses at risk is something that we need to take with real seriousness. And so I have engaged further after we had our initial conversations.

The answer to your question is, yes, we have been and have increased our interaction with our Canadian counterparts, particularly with respect to two issues. One is to make sure the applicable Canadian fisheries have regulations that are, frankly, as tough as ours. So making sure that their Canadian fisheries regulations match up with ours, and pushing them on that.

And secondly, looking into vessel speeds, and I think NOAA—this year NOAA Fisheries collected comments on our assessment of the current Vessel Speed Rule, and evaluating the need for future action. So I think—because you have also commented that it is the vessel strikes that are a problem. And so we are looking into the speed of the vessels.

Senator COLLINS. Thank you. Thank you, Mr. Chairman.

Senator MORAN. Thank you, Senator Collins.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you Mr. Chairman.

And, Madam Secretary, it is great to see you again. And I know we are still waiting for the full budget, but I just want to commend you and your team, for signaling through the "skinny budget", which we do have your ongoing commitment to the Minority Business Development Agency, and not only a commitment, but a real effort to elevate the importance of that Agency, both in terms of an increased budget that would support a dedicated assistant secretary, as well as a significant boost in the funding. I look forward to working with you on that.

I have teamed up with my colleague from Maryland, Senator Carter and others to introduce legislation, to make that agency permanent, up, and also to provide more opportunities by teaming up with HBCUs and the MSIs. We think there can be an important synergy between the work done at the MBDA, and HBCUs, and the MSI.

So I look forward to working with you on getting that legislation through, and ask you to take a look at it. I also want to thank you for all the input you have provided us as we work on the Endless Frontier legislation to enhance American competitiveness, lots of important provisions in that bill.

One I want to bring to your attention. I teamed up with Senator Blunt, and the bill, essentially, directs you as secretary—this is the normal procedure—to enter into a contract with the National Academies of Sciences, and Engineering, and Medicine, to provide us an update on key areas of emerging science and technology that we, as the United States, need to keep on top of.

And then there would be a regular update to that. We all got caught behind on 5G technology, and we want to make sure that as we make this investment in our competitiveness, that we have a process going forward, to make sure that we keep up with that. So I want to—I just want to bring that to your attention.

As you know, the Department of Commerce is wide-ranging. There are two agencies in Maryland that are important to the country and important to our State. One is NOAA, in Silver Spring, Maryland, and I look forward to working with you and NOAA on their continued efforts to protect the Chesapeake Bay.

The other is NIST, which of course plays a really important role in standard setting, both here and around the world, and has many important components to their budget, but quantum computing is an area that I strongly believe we need to—we need to strengthen going forward.

Finally, and most of my questions relate to the EDA, the Economic Development Administration. You and I have spoken about the importance of those funds. And there has been bipartisan support on this subcommittee, for funding that agency, even when previous administrations have proposed deep cuts to that budget.

And it is because of the flexibility of the funds. And I was just on a state-wide Zoom call with constituents in Maryland to talk about EDA. And I want to thank members of your team who participated in that, so people could understand how to go about competing for those grants.

As you know, the American Rescue Plan had $3 billion in the EDA. Can you give us an update on when you are going to be releasing guidance on that? I know there is a real interest now in moving forward, and I don't—if you could give us an update on where that stands.

ENHANCING AMERICAN COMPETITIVENESS

Ms. RAIMONDO. Thank you. By the way, I fully share your focus on quantum computing, and the President's budget, the "skinny budget", as you say, does include additional funding for AI research, and quantum computing research, and the long-standing relationship with the University of Maryland, I think will only continue to get stronger.

Senator VAN HOLLEN. Good.

EDA AMERICAN RESCUE PLAN FUNDS

Ms. RAIMONDO. So the $3 billion of EDA, the answer is very soon, we are working night and day on it. I feel the pressure to get it out the door, but to do it—you know, it is a balance, right? I would love to get it out the door tomorrow, but we have $3 billion, it is bigger than anything EDA has ever done. So I would say very soon.

That there is $750 million specifically for travel and tourism, we feel a particular sense of urgency on that. The summer season is upon us. We really want to get that out the door. So it would be helpful.

The rest of it is more, as you say, flexible. I can tell you that our plan is to have it be broad in its application, which is to say, and things we have talked about, allow it to be used for infrastructure, for job training, for rebuilding particular communities that are especially distressed. So we really want to take the full opportunity, and I think you will be pleased with the timeline.

Senator VAN HOLLEN. Well, thank you. I do want to follow up with you later about those funds.

Ms. RAIMONDO. Yes.

Senator VAN HOLLEN. Because, as you say, there is a lot of interest, and we want to make sure that, you know, those who have not necessarily participated in a formal grant process, and they don't know how to jump through all the hoops——

Ms. RAIMONDO. Yes.

Senator VAN HOLLEN [continuing]. Are fully eligible. So we look forward to working with your team. Just if you could make people available in the Department——

Ms. RAIMONDO. Yes.

Senator VAN HOLLEN [continuing]. To provide the technical assistance to those who are seeking funding.

Ms. RAIMONDO. Thank you.

Senator VAN HOLLEN. Thank you.

Thank you, Madam Chair.

Senator SHAHEEN. Thank you.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Madam Chairwoman.

And Secretary, it is good to see you, although you are a long ways away here.

Ms. RAIMONDO. Thank you.

NOAA FISHERIES SURVEYS

Senator MURKOWSKI. But thank you for the many conversations that we have had. I just want to reinforce for the record today, your commitment to monitoring the work of NOAA with regards to our fisheries surveys. As I shared with you, last year those stock assessments were not able to proceed, which was a real concern to our fishermen, and all those who rely on our sustainably managed fisheries.

I had an opportunity just yesterday to speak to the nominee for the NOAA administrator, reinforced with him the priority here. So I just want your commitment to ensure this full schedule of fisheries surveys is conducted in Alaska in 2021. And if there is—any challenges that you have in terms of implementing this year's survey plan, would you please, make us aware so that we can help you with that.

Ms. RAIMONDO. Yes. You do have my commitment. Last year due to COVID we suspend—the Department suspended the normal order. There is no expectation that that will happen this year, and we are on path to kind of be back to business as usual. So I don't anticipate that there will be any issues.

Senator MURKOWSKI. Good. Appreciate that. Another one that I would just ask you to be monitoring and keep us apprised in terms of updates. One of my long-term priorities has been to return the Fairweather to Ketchikan as part of its home port. We have worked through that; Senator Sullivan on the authorizing side, myself on the appropriation side.

So it looks like everything is proceeding just as we had hoped, and planned, and is on schedule. But I would just ask that you commit to periodic updates on the project to ensure that we are on track. The people of Ketchikan are quite anxious. It is been a long time. But we are feeling pretty optimistic about where we are.

Ms. RAIMONDO. Yes, absolutely.

EDA AMERICAN RESCUE PLAN FUNDS

Senator MURKOWSKI. Thank you. EDA, one of the—one of the real significant impacts that we saw in Alaska due to the COVID–19 pandemic, was a significant hit to our tourist sector, and in a considerable way. We just passed into law, and the President signed on Monday, legislation that will allow cruise ships to bypass Canada, so that we can have some semblance of a season beginning the end of July.

So it does not give as much, but it gives us a little bit of hope. One of the things that we put into the American Rescue Plan was support to EDA to assist communities. There was $3 billion, 25 percent of those funds go to help States and communities that have suffered economic injury, in the areas of travel tourism and outdoor recreation.

This is something that, within Alaska, we are looking very critically at this because we think that this can provide a level of support and relief. I don't know if you have more details on the criteria that EDA will be using, as it is making these grants. But we are starting to hear from communities about what those might be. So I don't know if you have anything that you can provide me and the subcommittee in terms of criteria for these EDA grants.

Ms. RAIMONDO. I don't. As I was saying to Senator Van Hollen, we expect, very soon, to be getting this money out the door, both the—particularly the $750 million for travel and tourism.

Senator MURKOWSKI. Right.

Ms. RAIMONDO. That is our top priority. So I think, you know, weeks away is our goal.

Senator MURKOWSKI. Okay.

Ms. RAIMONDO. I will say it is very likely that the criteria will take into account the magnitude of how much an area depends on tourism and how affected that community was.

You know, we are trying to get the money to where it is needed most and where people were hardest hit.

Senator MURKOWSKI. We have got a couple of good examples, Skagway and Haines—excuse me—Skagway and Healy, two areas where some 80 percent of their community's revenues come from tourism. And so they have effectively seen losses that are breathtaking. In fact, I think both of these communities top the list of the Top 10 Most Dramatically Impacted by economic loss due to tourism.

So they are—I think they probably fit into your criteria. I would certainly hope so. But again, the more detail that these communities can have on this, it is appreciated.

Thank you, Madam Chairman. And thank you, Madam Secretary.

Senator SHAHEEN. Thank you, Senator Murkowski.

SECTION 232 TARIFFS

Senator BRAUN. Thank you, Madam Chair.

Good to see you again, Madam Secretary. I come from Indiana, we are the biggest steel producing State in the country, and the industry has been kind of ravaged over time for many reasons, in addition to what has happened most recently. And I would not be so concerned about the future of the steel industry other than the glut that is out there is mostly housed within the country of China.

So they have got—in a planned economy, I guess they plan to use that seal capacity somewhere down the world in a way that does not, kind of, urge them to use, kind of, destructive methods to sell their capacity. But in the meantime, we have been going back and forth with import surges. And the Trump administration had the Section 232 Tariffs that I think finally gave a respite to that behavior, and keeps an industry like steel; and for me, a guy that is a believer in free and of course fair trade along with it, think of that is necessary. Otherwise, I think sooner or later, if that glut was spread out among many countries, I think it would be different when it is within one that gives them such a disproportionate incentive to try to dump and use it the wrong way.

Interested to know on the—I know the Biden administration is looking at some of the Trump era policies. Are you involved in the discussions on the Section 232 Tariffs?

Ms. RAIMONDO. Yes, very involved. I will say—I have said many times, I know that these tariffs have upset our allies, but I have said many times they have worked in so far as—if you look at steel production after the tariffs, it is significantly higher. And they have helped to level the playing field, like you said, and protect American workers, but also protect our national security, because we cannot have these steel operations going out of business.

So yes, I am deeply involved in the thick of them. The challenge is we have to figure out a way to protect our steel workers and our steel industry. But also be conscious of the fact that, you know, our allies, particularly in the EU, aren't pleased with us for slapping them with national security tariffs. So we have to find a balance.

Senator BRAUN. So where do you see China's behavior in the long-term picture when it comes to kind of being the focal point of why we had to do that in the first place?

Ms. RAIMONDO. I think we can assume that they will only get worse. I think we can assume they are the focal point. I think we should take as fact that they are engaged in anti-competitive practices and dumping, and I think we need to act accordingly and if—and we would be foolish to think any other way.

Senator BRAUN. So I am guessing then, in that one particular area, the Trump policies on, you know, Section 232 Tariffs, working pretty decently?

Ms. RAIMONDO. Yes.

COUNTERVAILING DUTY/ANTIDUMPING CASES

Senator BRAUN. Okay. Another issue, resources within your Department, I think that we are going to have increasing instances of dumping issues. And, you know, I know when that happens, it has got to go through a certain analysis, cases are created.

Do you think with your current funding stream, that you are adequately kind of positioned, when it comes to what I would think is going to be a constant barrage of having to deal with those kinds of cases?

Ms. RAIMONDO. I do. But I think it is worth us having a continued discussion. In 2016 we had 315 countervailing duty, antidumping cases pending. Today it is about 600. So the fact that they have doubled, we are keeping up, we are serious about enforcement, Congress appropriated us a-million-dollar fund for an anticircumvention team, and then doubled it $2 million for an anti-circumvention team.

So I guess what I am saying is, yes, but I want to reserve my right to come back at a later date to ask for more appropriations, because we have to be serious about it, and it is a lot of work.

MANUFACTURING AND TECHNICAL EDUCATION

Senator BRAUN. So I am going to shift gears to a different topic with the time I have got remaining. Indiana is also the biggest manufacturing State per capita. We produce the most steel, and Indiana and Wisconsin kind of trade back and forth with that.

I was on a school Board for 10 years in my hometown, served on the education committee at the State level for 1 year, and a lot of what I think ails finding people, the high-demand, high-wage jobs is that we have, in some cases, stigmatized the pathway of a career in technical education preparation.

I see it changing a little bit, especially among rural high schools because, we in Indiana, I think ship out twice as many, 4-year degrees as were used, and I think that is a great pathway, but it is not matching the needs of business and commerce with proper training.

How much do you think not being able to align training with high-demand, high-wage jobs is maybe because there is that philosophy among higher ed, especially at the State level, that the only way to be successful in life is to get a 4-year degree? Or do you think we need to do better at actual preparing kids for degrees that are marketable and that are not going to put them on a pathway where they don't graduate in many cases?

Ms. RAIMONDO. So, listen, I grew up as the daughter of a guy that worked at a factory, the same factory for 30 years. So I grew up on a steady diet of being told manufacturing is a great job. And as governor, I increased the amount of career and technical education programs in high schools by 40 percent, aligned our community college with businesses to do exactly what you say, match up skills with demand.

College is not right for everyone. Half of the kids——people who go to college in America drop out, mostly because they cannot afford it. And then they are stuck with debt, no degree, and no job.

So this administration, President Biden, and all of us, are committed to pursuing something along the lines of what you are talking about, which is career and technical education, to line people up with jobs that exist. And what I need to do, as the Commerce Secretary is bring business to the table. Show up and tell us what skills do you need, and actually commit to hiring people.

Senator BRAUN. Thank you. I think there will be strong bipartisan support for that. And I think you have got the unique position to get the message out.

Ms. RAIMONDO. Thank you.

SEASONAL SMALL BUSINESS WORKFORCE

Senator SHAHEEN. Thank you, Senator Braun.

I have a couple more questions and I don't know if we will have anybody join us but, hopefully, we can get through these before the next vote is called.

When you were in New Hampshire one of the things that you heard loud and clear from our—particularly our tourism industry that was represented at that round table was the challenge of finding workers. Our unemployment rate in New Hampshire is back down to about 3 percent. And it is a huge challenge, and it is magnified this year by the inability to get visa workers, either H–2B visa workers, or J–1 one student visa, students to come and work in our seasonal businesses.

And I was disappointed first that the administration decided to only add 22,000 additional H–2B visas for this year, and that it took so long to get the guidance out. It was only—it is only yesterday that employers are actually able to apply for those visas. And we have, as I think you heard at that round table, we have a number of seasonal businesses that have the same workers who come back every year. So it is not a question of vetting them. It is just a question of making sure that they can get in assuming that they pass a COVID test.

So do you have thoughts about how Commerce can help us work with our seasonal small businesses to ensure that they get the workforce that they need?

Ms. RAIMONDO. Yes. So thank you for bringing it up. By the way, I loved the visit, and I appreciate you inviting me. It was my first as Commerce Secretary.

And I heard the same thing you heard, which is pretty heartbreaking stories about small businesses that are hanging on by their fingernails because last year they were crushed, and this year they need to reopen, and the biggest barrier they have is access to labor.

So I heard it, and I share your concern. The Commerce Department—you know, this is in the Department of DHS in the area of DHS.

Senator SHAHEEN. Right.

Ms. RAIMONDO. I will commit to you today to call Ali Mayorkas again today and raise the concern, and to continue to raise the concern in the administration.

I guess what the Commerce Department can do, what I will do is just be an advocate to explain to the administration, or reiterate—reiterate to the administration that these are the small

businesses, the heart and soul of our communities, that is who we saw at New Hampshire.

Senator SHAHEEN. Right.

Ms. RAIMONDO. Small family-owned businesses that have been doing the same thing for 30 years are at risk of going out of business if we don't get them the labor they need. And this is by and large, temporary in nature, seasonal in nature, relatively, you know, low wage.

So you have inspired me to go at it again. And I will do everything I can as an advocate, and if you have specific asks that you think I could do, I am all ears.

Senator SHAHEEN. Well, thank you. I really appreciate that. And actually for many of the jobs in New Hampshire, because the labor shortage is so tight, the hourly pay—hourly wage is pretty high.

Ms. RAIMONDO. Yes.

Senator SHAHEEN. I mean, it is much higher than the Federal minimum wage at this point. Benefits and the long-term stability is lacking because they are seasonal jobs, but these are not jobs that New Hampshire workers, in general, want because the labor force is so tight. So I would appreciate anything that you can do.

Ms. RAIMONDO. Mm-hmm.

FISHERIES MONITORING COSTS

Senator SHAHEEN. To go to the other issue you heard about when you were in New Hampshire, which is our fisheries and the challenges faced by what has become a very small fishing industry now in the State. And one of the current concerns is the decision to require a hundred percent at-sea monitoring for our groundfish fisheries. And one of the things that has been really helpful over the last few years has been our ability to work with NOAA to help pay the cost of those at-sea monitors.

Can you commit that you will help us continue to look at that and try and help ensure that we can cover some of those costs for the fishing industry that is really in dire straits?

Ms. RAIMONDO. Yes. Yes. NOAA is planning to continue to fully fund the at-sea monitoring costs in New England, and obviously we will have—we will continue our dialogue.

CANADIAN BORDER CLOSURE

Senator SHAHEEN. That would be great. And finally, one of the real challenges that we are seeing right now, and I am hearing from businesses in New Hampshire, about the closure of our border with Canada. And I appreciate that this was done to address COVID challenges on either side of the border, but as we are having more and more people vaccinated, it has become less of an issue in the United States. Canada is on a trajectory to vaccinate a very high percentage of its citizens as well.

And I would hope that you can help encourage the administration to talk to our Canadian friends about the importance of opening that border. We have not only a lot of Commerce going back and forth across the border, that would like to go back and forth across the border, but in New Hampshire and in other—I know if Senator Collins were here, she would talk about Maine as well.

We have families who have relatives on the other side of the border, and they have had real challenges going back and forth. So I think the sooner we can get that border open the better in terms of commerce.

Ms. RAIMONDO. Yes. I agree. And I will do that. I will say that issue that Senator Murkowski brought up with the cruises, I was quite involved in that.

Senator SHAHEEN. Good.

Ms. RAIMONDO. Quite involved in that, speaking with Canadians, speaking with my Canadian counterpart, talking to the cruise lines, talking to our own HHS. So this is an area where I don't have any particular, you know, authority at all.

Senator SHAHEEN. Right? No, I understand.

Ms. RAIMONDO. I definitely will do what you ask and raise the concern and talk to my Canadian counterparts.

Senator SHAHEEN. I think it is really helpful for all of us who see this as a concern to raise it, both here and in Canada. I know that the inner-parliamentary dialogue that goes on between our Congress and the Canadians happened last week, and that this came up as an issue for both Canadians and Americans. So hopefully this is something we will see change very soon.

ADDITIONAL COMMITTEE QUESTIONS

Senator SHAHEEN. So that is the end of my questions. Thank you very much for being here. We have—let me just—we have an opportunity for questions for the record that need to be done within—I think we have until—the end of when?

Thirty days.

Senator SHAHEEN. Thirty days for the Department to respond. Don't we have a deadline for us to submit QFRs? One week. So one week from today. And, hopefully if there are any issues, either with those QFRs, or as you are looking at your budget and thinking about the challenges for the Department, please share any concerns with us, and let us know how things are progressing.

Ms. RAIMONDO. Thank you.

Senator SHAHEEN. And again, I appreciate your being here.

Ms. RAIMONDO. Yes. Of course, and your team has been terrific, as have you been accessible to me. And I appreciate it.

Senator SHAHEEN. Thank you.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. GINA M. RAIMONDO

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

A REVIEW OF THE PRESIDENT'S FISCAL YEAR 2022 FUNDING REQUEST FOR THE U.S. DEPARTMENT OF COMMERCE

Question 1. During the last administration, there were several incidents where the Department allowed politics to influence scientific communication and decision-making. Perhaps the most concerning was the National Oceanic and Atmospheric Administration releasing a statement undermining National Weather Service meteorologists' prediction of Hurricane Dorian's track at the behest of the White House. The incident, which could have put property and lives at risk, was known in the media as "Sharpiegate."

The Inspector General investigated the incident and found that, "[t]he Statement undercut the NWS's forecasts and potentially undercut public trust in NOAA's and the NWS's science and the apolitical nature of that science." But Department employees who also participated are not bound by the agency-specific Scientific Integrity Policy, exposing a gap scientific integrity protections across the Department.

I know that this is an important issue to you and the administration, with President Biden releasing a "Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking" in his first week in office.

1a. Does the Department of Commerce plan on implementing a Department-wide scientific integrity policy? Such a policy should not supersede an individual bureau's policy, but should serve as the baseline requirement to protect scientific research and communication.

Answer 1a. Yes. DOC has stated it will develop its own policy. A DOC-wide scientific integrity policy would promote a continuing culture of scientific excellence and integrity, while informing management and policy decisions throughout the department. The DOC policy will establish a baseline with which all bureaus must comply and permit bureaus to develop their own policies that would be independent of the DOC policy as long as they are consistent with the fundamental principles of the DOC policy (i.e., not be weaker than the DOC policy). Mandatory training for all political appointees, as well as career Federal employees and DOC affiliates (such as contractors, interns, fellows, etc.), would enable proper implementation of the policy.

The recent Presidential "Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-based Policymaking" requires departments and agencies to have a Chief Science Officer and Scientific Integrity Official. The Department is working to fill these positions.

1b. If so, when can we expect to see a Department-wide scientific integrity policy?

Answer 1b. The Department is consulting with bureaus including NOAA, the National Institute for Standards and Technology (NIST), and the Census Bureau (Census) to provide inputs for a draft Department-wide policy. The White House Office of Science and Technology Policy Scientific Integrity Task Force findings will also inform the Department's policy.

QUESTIONS SUBMITTED BY SENATOR JERRY MORAN

Question 1. The International Trade Administration's (ITA) trade promotion efforts are one important way that the Commerce Department helps to support American companies overseas and keep America competitive. However, our investments in this area and the reach of ITA's international field is lacking in comparison to that of China and other competitor nations. This is particularly the case in Africa, South America, the Caribbean, and the Western Pacific.

1a. How would the fiscal year 2022 budget request help to grow ITA's global network and better support the ability of U.S. companies to access emerging and competitive foreign markets?

Answer 1a. The International Trade Administration (ITA) continues to strengthen the competitiveness of U.S. industry, promoting trade and investment and ensuring fairness through the rigorous enforcement of U.S. trade laws and agreements. ITA's Global Markets (GM) and U.S. & Foreign Commercial Service business unit helps U.S. companies export and/or increase sales to foreign markets through its U.S. Export Assistance Centers (USEAC) located throughout the United States, in conjunction with its Washington, DC, based staff and overseas offices in our U.S. Embassies and Consulates around the world. The fiscal year 2022 budget request fully funds GM's current level of operations, enabling it to sustain its existing global footprint and the hiring gains achieved in fiscal year 2021.

1b. What does it say about how the Biden administration is prioritizing trade that under the fiscal year 2022 budget DOC's trade-related agencies—ITA and BIS—would receive the smallest percentage increases of any units within the Department? Is trade-related work a priority for the Biden administration?

Answer 1b. As a key component of the Biden administration's objectives to promote post-pandemic economic recovery, job creation, and to protect national security, the trade-related work of BIS and ITA are priorities for the Department of Commerce. The administration's first focus was on critical programs at Commerce that were most in need of increased funding following the actions of the prior ad-

ministration. In the case of BIS, given the broadened focus, in recent years, of its mission and the use of Commerce's export control tools, the administration needed time to carefully evaluate BIS' resource requirements for emerging or expanding program areas. Fully funding BIS and its national security mission is a priority and working with Congress on the future of BIS and necessary resources is a focal point for the Department of Commerce. In the case of ITA, the administration has proposed additional funding to examine exclusion requests, objections by U.S. producers, and rebuttals/surrebuttals in connection with Section 232 tariffs on imported steel and aluminum products. Additional funding was also proposed to support the current sample size of the Survey of International Air Travelers (SIAT) to provide additional data required by the U.S. Government and stakeholders to design economic programs to help the Travel and Tourism industry recover from the COVID–19 pandemic. The Department of Commerce remains focused on working with Congress to ensure that ITA is fully funded in order to fulfill its mission to strengthen the competitiveness of U.S. industry, promote trade and investment, and ensure fair trade through rigorous enforcement of U.S. trade laws and agreements.

Question 2. The fiscal year 2022 budget request includes full funding for two new Manufacturing USA institutes, including one which would be focused on the design and manufacturing of semiconductors. The 2020 National Defense Authorization Act included legislation that defined a number of industry areas that future Manufacturing USA institutes should be focused on. That list of industry areas included semiconductors, but also other important "Industries of the Future" like artificial intelligence and quantum computing.

2a. If congress were to provide funding for new Manufacturing USA institutes in fiscal year 2022, is there a particular reason why both solicitations shouldn't allow for open competition among all relevant industry areas?

Answer 2a. The Manufacturing USA statute provides NIST the authority to run "open-topic" competitions, accepting all topics proposed by industry. Should the President's fiscal year 2022 discretionary budget request for two NIST sponsored Manufacturing USA institutes be enacted, NIST plans a single open-topic competition from which multiple awards may be made. The competition would be open to all topics from all industry areas. The competition would include a selection factor for national priority topics, as described in the National Strategic Plan for Advanced Manufacturing. Those priorities include semiconductor manufacturing, artificial intelligence, and quantum computing.

2b. What is the driver behind the prioritization of EDA's coal program in the fiscal year 2022 budget over some of EDA's other nationwide programs like "Public Works" or the "Regional Innovation Program?"

Answer 2b. As we transition toward a clean energy future, the Biden administration is leading an all-of-government effort to help revitalize and promote regional economic growth and diversification in America's coal communities. This administration is committed to ensuring that coal communities are not left behind as the energy landscape transforms. This funding for coal communities will drive economic diversification, aid in the scaling of new industry sectors, and create good-paying jobs for hard-working Americans.

2c. How, if at all, would the request for increased funding for "Restoration and Resilience" within the National Oceanic and Atmospheric Administration go to supporting the resiliency needs of non-coastal States?

Answer 2c. NOAA's increased funding for "Restoration and Resilience" will provide useful lessons learned and best practices related to risk communication and climate adaptation approaches that can be applied by communities in both coastal and non-coastal States. Flooding and resilience best practices and adaptation strategies developed at the coast can inform inland areas that experience drought, heat waves, changes in heavy precipitation or other disaster events. NOAA and its partner programs share successful approaches at national events, such as the National Adaptation Forum.

Natural infrastructure is just one example of a mitigation and adaptation approach that can be applied in inland States to improve waterways and reduce risks from floods, droughts, and fires. Communities across the country are increasingly turning to nature-based approaches to address climate and weather hazards because, in many cases, these habitats are already well equipped to adapt to change and withstand or recover from weather impacts. NOAA's investments in coastal restoration and natural infrastructure solutions, as well as the resilience training, engagement, and capacity building planned for coastal communities, will provide crit-

ical information that can be shared with other communities that are working to adapt to a changing climate.

As we look to rebuild our Nation's infrastructure of roads, bridges, buildings, railways, and airports, it is important to ensure these new infrastructure investments are resilient to environmental factors. When it comes to major infrastructure investments, resilience requires foundational positioning data to inform decisionmaking such as "where to build a road," "how tall to build a bridge," "where will water flow once it reaches the land," etc.

In order to answer these questions and build resilient infrastructure, surveyors and engineers need access to an accurate and cohesive reference frame for the Nation. NOAA's National Spatial Reference System (NSRS) provides a consistent coordinate system that defines latitude, longitude, height, scale, gravity, and orientation throughout the entire United States, not only in coastal States. A portion of NOAA's increased funding will be dedicated to modernizing the NSRS to further enhance data accessibility and accuracy for the entire Nation, including for our rural and remote communities. While captured under "Observations and Forecasting," these investments also provide critical information to build resilience to climate and weather hazards.

The need for resilient community infrastructure extends beyond coastal States. Farmers need an accurate reference frame to efficiently manage their crops. All Geographic Information Systems applications rely on an accurate reference frame. In the future, autonomous vehicles will rely on an accurate national reference frame to travel safely at high speed.

In Oceanic and Atmospheric Research (OAR), the $10 million Enhancing Regional and Community Resilience by Scaling Up RISA Program and "Climate-Smart" Communities Initiative in the President's fiscal year 2022 discretionary request (OAR–33) would support lasting and equitable climate resilience across the Nation, including non-coastal States. The proposal builds on and extends the proven capabilities of the Regional Integrated Sciences and Assessments (RISA) program and the U.S. Climate Resilience Toolkit (USCRT) to advance adaptation measures and resilience planning at regional and local scales, while prioritizing environmental justice. If funded, this initiative would expand the RISA program and increase support for existing RISA Regional Teams, which include many non-coastal States. It would also support a new public-private partnership, the Climate-Smart Communities Initiative, to scale up and accelerate training and the pace of resilience-building in communities across the Nation utilizing the USCRT. Communities that engage in this initiative will be better positioned to identify their climate information needs, vulnerabilities, risks, and potential resiliency solutions, and thus may turn to RISA or other activities for more in-depth analysis and tailored support.

Question 3. Concurrent with the transmission of the answers to the fiscal year 2022 Questions for the Record, please provide the following information:

3a. The number of days the fiscal year 2022 Questions for the Record were with the individual Department of Commerce Bureaus for response and review.

3b. The number of days the fiscal year 2022 Questions for the Record were with the Department of Commerce Office of Budget for response and review.

3c. The number of days the fiscal year 2022 Questions for the Record were with the Department of Commerce Office of Legislative and Intergovernmental Affairs for response and review.

3d. The number of days the fiscal year 2022 Questions for the Record were with the Department of Commerce Office of Policy and Strategic Planning for response and review.

3e. The number of days the fiscal year 2022 Questions for the Record were with the White House Office of Management and Budget for response and review.

Answer 3a-3e. The Office of Budget (OB) received QFRs on June 15, 2021. After reviewing questions to determine Bureau assignment, OB distributed QFRs to DOC Bureaus on June 22. All bureaus responded to OB by July 14. After review and edits, OB forwarded QFRs to the Office of the Secretary (OLIA, OGC, and Policy) on July 23 for staffing. The Office of Secretary cleared all QFRs on September 1. OB forwarded QFRs to OMB on September 8. OMB cleared the QFRs on October 8; OB finalized all responses and forwarded them to the Office of the Secretary for final review and clearance for Hill transmittal on October 13.

Question 4—Add On. On January 5, 2021 the Trump administration released Executive Order 13971 to continue its strong stance against Chinese controlled companies. Similarly, the Department of Commerce under the previous administration released an interim final rulemaking, "Securing the Information and Communications Technology and Services Supply Chain" (ICTS) on January 19, 2021, to address na-

tional security threats to information and communications technology posed by "foreign adversaries," including China. While these efforts are lauded, much of U.S. industry has expressed concerns over the uncertainty of when and how these executive actions will be implemented and what will be required to comply with their restrictions.

4a. With respect to the ICTS interim final rule that became effective on March 22, 2021, can you provide further details on how and when the Department will implement this now-effective rule to ensure that U.S. companies have clear guidance on how to comply? Furthermore, what actions is the Department currently taking to enforce this rule?

Answer 4a. The Department has stood up an Information and Communications Technology Task Force under the Office of the Secretary that is led by the Deputy Assistant Secretary (DAS) for Intelligence and Security (I&S), and includes key stakeholders from various bureaus and offices, such as the Bureau of Industry and Security, International Trade Administration, National Telecommunications and Information Administration, and the Office of General Counsel. The task force is supporting both operations and policy under Executive Order (EO) 13873 and related orders.

The Department is currently assessing comments received following the publication of the Information and Communications Technology and Services (ICTS) interim final rule (IFR), which will guide the Department in any changes it deems necessary in revising the final rule. Nonetheless, the IFR is currently in force, and will remain so. President Biden also signed Executive Order (EO) 14034 on Protecting Americans' Sensitive Data from Foreign Adversaries on June 9, 2021. Because this EO establishes new criteria for the evaluation of transactions involving connected software applications, the Department plans to solicit additional input through the rulemaking process on these criteria. This will allow for additional input from the business community and collaboration with the Department in revising the final rule. The Department is committed to providing guidance on the rule's implementation.

As the Secretary announced on March 17 and April 13, 2021, the Department has issued subpoenas supporting the review of transactions under EO 13873.

4b. Now that the Department has collected comments on the ICTS interim final rule, does Commerce plan to release further guidance and direction to implement the rule? Are any additional rulemakings planned in light of the comments received from industry, and if so, what is the anticipated timeframe for such actions?

Answer 4b. The Department is currently assessing comments received following the publication of the Information and Communications Technology and Services (ICTS) interim final rule (IFR), which will guide the Department in any changes it deems necessary in revising the final rule. Nonetheless, the IFR is currently in force. Furthermore, the Department also issued an advance notice of proposed rulemaking (ANPRM) for a pre-clearance/licensing program for ICTS Transactions. This ANPRM was issued on March 29, 2021, and closed on April 28, 2021. The Department is currently assessing comments received from the ANPRM.

Finally, as noted above, President Biden signed Executive Order (EO) 14034 on Protecting Americans' Sensitive Data from Foreign Adversaries on June 9, 2021. Because this EO establishes new criteria for the evaluation of transactions involving connected software applications, the Department plans to solicit additional input on these criteria as it seeks to finalize implement EO 13873. This will allow for additional input from the business community and collaboration with the Department in revising the final rule.

4c. What considerations has the Department taken, or will it take, in implementing the ICTS rule to help ensure it is not overbroad or unnecessarily burdensome for U.S. companies to comply?

Answer 4c. The Department takes seriously its dual role of encouraging United States commerce to thrive, while also addressing the national security threat posed by the exploitation by foreign adversaries of the Information and Communications Technology and Services (ICTS) supply chain. The Department's implementation of the rule will give due consideration to both of these critical interests. As described in more detail above, the Department is undertaking further engagement with industry through the rulemaking process and is committed to providing guidance to industry as it implements the rule.

4d. Given the breadth of the interim final rule, does the Department intend to provide guidance to industry on what products or technologies are of most concern from a national security perspective?

Answer 4d. The current interim final rule contains a list of the categories of transactions involving ICTS that are subject to Department review in 15 CFR Part 7, Section 7.3. As it implements the rule, the Department will consider the extent to which it can provide further guidance to industry on the categories of ICTS transactions that are of concern.

4e. With respect to Executive Order 13971, can you provide the Committee with a timeline on its implementation and when we can expect to receive further details on how it will be implemented?

Answer 4e. Executive Order (EO) 13971 was revoked upon the issuance of EO 14034, Protecting Americans' Sensitive Data From Foreign Adversaries, on June 9, 2021.

QUESTIONS SUBMITTED BY SENATOR CHRISTOPHER A. COONS

Question 1. Legislation under Senate consideration would direct the Department of Commerce to implement Section 9902 of the Fiscal Year 2021 National Defense Authorization Act (the CHIPS Act), to incentivize investments in a more secure and resilient semiconductor supply chain. Under your direction, would the scope of this program include new and expanded facilities to produce equipment and materials used to produce semiconductors?

Answer 1. The Department is developing plans for the implementation of the CHIPS Act funding requested as part of the American Jobs Plan and included in the United States Innovation and Competition Act passed by the Senate. The Department is designing the program to incentivize the construction and expansion of facilities to restore U.S. leadership in semiconductor manufacturing.

Under the statute, eligible entities include private entities, consortia of private entities, or consortia of public and private entities with a demonstrated ability to substantially finance, construct, expand, or modernize a facility relating to fabrication, assembly, testing, advanced packaging, or research and development of semiconductors.

QUESTIONS SUBMITTED BY SENATOR LISA MURKOWSKI

Question 1. In Alaska, 144 "environmentally threatened" communities need an estimated $4.3 billion to address climate change impacts on infrastructure. For example, decades of planning and millions of dollars were required to relocate one village, the Southwest Alaska village of Newtok, to an all-new village called Mertarvik. This is a testament to the enormous climate-related difficulties facing any coastal or river village or small town in America. The Newtok Village Council navigated multiple Federal and State agencies to obtain funding and implement design, engineering, and construction. This is just one example of how Alaska is on the front lines of climate change; it is also experiencing substantial climate-related impacts to fisheries due to warm water blobs in the Gulf of Alaska and stock migrations into colder waters.

1a. The Department of Commerce plays a critical role in preparing our Nation for the impacts of climate change through the National Oceanic and Atmospheric Administration's (NOAA) science and research projects. We cannot adapt and Congress cannot make informed decisions without reliable information. I see that the discretionary request includes $800 million for NOAA to expand climate observation, forecasting, and research. How would NOAA utilize those funds to better prepare a State like Alaska that is ground-zero for climate change in the Arctic?

Answer 1a. Within NOAA's National Ocean Service, fiscal year 2022 spending will support Alaska observations and forecasting, as requested within the Modernizing NOAA's Foundational Geospatial Positioning Framework and Water Level Observations for Climate Decision Support request. Specifically, this includes funding to ensure that National Water Level Observation Network stations in Alaska continue to provide valuable real-time water level data to Alaskan communities, and to support airborne gravity data collection along the Aleutian Island chain.

NOAA Oceanic and Atmospheric Research (OAR) has several programs that focus on the Arctic region, including Alaska, which would expand activities related to climate observation, forecasting, and research using the funds.

NOAA's Regional Integrated Sciences and Assessments (RISA) Program increases regional capacity to adapt to climate change. RISA's Regional Teams, including the Alaska Center for Climate Assessment and Policy (ACCAP) at the University of Alaska Fairbanks, build sustained relationships between decision makers and researchers that support collaborative and equitable adaptation to climate risks. ACCAP has been funded since 2006 and has applied for another competitively selected award to continue work 2021–2026.

A portion of the $10 million Enhancing Regional and Community Resilience by Scaling Up RISA Program and "Climate-Smart" Communities Initiative in the President's fiscal year 2022 discretionary request (OAR–33) would increase the RISA Program's funding. If this initiative is funded, it would enable the ACCAP RISA to extend their work across and into more communities to directly aid decision maker efforts with climate change impacts. For example, this request includes funds for small grants to facilitate the inclusion of non-profit Alaska Native social services organizations in the ACCAP RISA's capacity building efforts. ACCAP RISA will expand Alaska's regional capacity to adapt to climate change in partnership with NOAA research and services by: (1) conducting decision-relevant climate analysis and engaging in knowledge to action partnerships that meet local and regional climate science needs related to extreme events and impacts; (2) supporting Tribal resilience; (3) advancing climate change related outreach, science communication, engagement, and networking in Alaska among diverse groups; and (4) evaluating how well ACCAP's science is informing societal outcomes.

NOAA Sea Grant provides critical engagement with coastal and Tribal communities in Alaska and around the country, providing locally relevant research, technical assistance, and extension expertise to improve economic and environmental resilience in these communities, including addressing climate impacts. A portion of the $35 million increase for Sea Grant Builds Resilient Coasts: Expanding Local and Regional Coastal Resilience Capacity and Community Assistance in the President's fiscal year 2022 request (OAR–89) will expand Sea Grant's research and engagement efforts to make coastal communities, including those in Alaska, more resilient to natural hazards and changing conditions. Sea Grant represents long-standing, embedded, and trusted networks that harness the depth, reach, and voices of university, State, and local expertise, including traditional knowledge. Sea Grant also focuses on critical partnerships, like those with RISA above, that provide essential complementary resources and services needed to more fully support communities.

Additionally, through initiatives like the request $23 million Advancing Global Ocean Observing System increase (OAR–98) in the President's fiscal year 2022 request, NOAA's Global Ocean Monitoring and Observing (GOMO) Arctic Research Program will make investments in new observational, modeling, and forecasting capacity to improve NOAA's sea ice forecasts, which are directly related to Alaskan coastal resilience, subsistence activities, and safe over-ice travel. The Coupled Arctic Forecast System (CAFS) is a NOAA experimental model that is currently outperforming a number of operational forecast center sea-ice models when compared to observations. Further development of this model supported by fiscal year 2022 appropriations would include working with Alaskan communities, navigators, search and rescue personnel, and fisheries management organizations to gather requirements and develop new tailored modeling products to provide specific services for these users. Other investments focus on gathering higher resolution observations of sea ice and ocean heat content to enhance NOAA operational sea ice and marine forecasts. These improvements will make a meaningful impact on the information the State of Alaska needs to make informed decisions regarding the impacts of climate change and rapidly diminishing sea ice.

GOMO's Arctic Research Program will also invest in observations that improve spatial coverage and understanding of harmful algal bloom species that are emerging in the Northern Bering and Chukchi Seas. Studies show that recent warming of Chukchi Sea waters has reached levels that now support the development of toxic blooms in that region, representing a significant and recurrent threat to human and ecosystem health, particularly given the heavy dependence on subsistence harvesting for food. The Arctic Research Program will work with partners at the Alaska Ocean Observing System, NOAA Fisheries, and the NOAA Ocean Service to continue monitoring this emerging threat to Alaskan communities. Additionally, the President's budget request would allow for improved observational coverage and investment in the development of a model of ocean acidification (OA) in the Chukchi Sea, as well as enhanced modeling of OA in the Bering Sea.

Also, within OAR, NOAA has two initiatives specifically targeting underserved coastal communities, including a $3 million increase for Tribal Drought Resilience Initiative (OAR-38) and a $5 million increase for Sea Grant's Service Equity: Assessing and Integrating Diversity, Equity, and Inclusion Actions to Support Underserved Communities (OAR–94), in the President's fiscal year 2022 request. These requests support actions such as cutting-edge climate forecasting and service delivery and a robust approach to diversity, equity and inclusion to position NOAA as a leader in support of vulnerable communities to prepare for, adapt to, and become more resilient.

The National Weather Service (NWS) will execute a much-needed recapitalization of the long-standing Tropical Atmosphere Ocean (TAO) buoy array, which provides vital data on sub-seasonal to seasonal (S2S) and year-to-year climatic variations related to El Niño and the Southern Oscillation that can have tremendous impact on the Nation's weather. These data are used to produce NWS' seasonal outlooks. Like shorter-term forecasting, the study of this variability enables more rapid prediction of climate anomalies that would impact the United States, including Alaska and the Arctic regions of the globe.

The NOAA/NWS fiscal year 2022 budget request includes $15 million to establish a Seasonal Forecast System (SFS) forecast capability to improve the skill, lead time, and breadth of climate, seasonal and extended range weather and environmental prediction. The SFS will enable NWS to provide enhanced critical long-range monthly and sub-season to seasonal predictions for Alaska. The combination of the Global Forecast system for weeks 1 and 2 and the SFS can be used for managing water resources and also include predictions for flood and drought; storm severity and frequency; extreme heat or cold waves; extreme winds; fire severity and danger; coastal storm surge and erosion, and other environmental factors. Through our $5.3 million Sub-Seasonal to Seasonal Decision Support Services request, the NWS will leverage social science to engage stakeholders across multiple sectors (e.g., agricultural, water resources, public health, emergency management, marine resources, and energy sectors), including decision makers in underserved communities such as Tribal governments, economically disadvantaged rural regions, and other vulnerable populations, in the development of requirements for actionable data/services. This information will be used to co-develop decision support services that meet those stakeholder needs using an iterative approach. We will continue to engage and listen to key decision makers in Alaska such as Native Alaskan water managers, emergency managers, energy producers, and other sectors to insure that these model prediction capabilities address their needs and include providing the necessary information to make informed long lead time decisions which have significant impact on the Alaskan economic vitality and domestic security, that communities are ready for and respond to impending impactful weather, water and climate events.

In the United States, floods account for more loss of life and property than any other type of severe weather-related event. To mitigate flooding impacts to the U.S. population and economy, the NOAA/NWS fiscal year 2022 budget request includes a $5 million initiative to operationalize a Flood Inundation Mapping (FIM) capability nationwide. This FIM capability has been successfully demonstrated in Texas and the northeast United States as part of NOAA's only DOC Agency Priority Goal. This initiative will enable the NWS to complete the development, operational implementation, and distribution of FIMs nationwide.

Implementation of FIM in Alaska would be provided for inland waterways wherever there are appropriate terrain and hydrography datasets. Initially, this includes Alaska locations where NWS produces official river forecasts. In fiscal year 2023, after National Water Model (NWM) v3.0 is deployed, high-resolution NWM-based streamflow guidance will also be used to generate real time FIM for rivers flowing into the Cook Inlet and the Copper River and its tributaries. These watershed domains include about 65 percent of the Alaska population.

1b. The University of Alaska Fairbanks (UAF) recently acquired nearly 100 real-time seismic and weather stations that were installed across Alaska as part of the National Science Foundation USArray Transportable Array. This network provides crucial seismic and atmospheric data to the U.S. Geological Survey, NOAA, the Department of Defense, and other agencies. In fiscal year 2021, UAF joined the National Weather Service's National Mesonet Program with the intention of incorporating 70 of these stations (mostly in northern and western Alaska) into the National Mesonet and supplementing their weather and atmospheric monitoring capabilities. Will the northern set of these weather and atmospheric sensors be helpful as NOAA works to better understand climate and weather patterns in Alaska?

Answer 1b. Yes, these stations will be very helpful to NWS through the National Mesonet Program. Roughly 10–15 are installed over northern Alaska in the Brooks Range and the North Slope. All the stations are in the interior of Alaska, and mostly in areas with no other observation sources, so these remote stations provide valuable data that fill gaps in our observing capabilities, enhancing the NWS forecast and warning mission for Alaska, as well as supporting research to improve the understanding of weather patterns and pattern evolution.

The ability to use these observations for climate monitoring will be dependent upon the long-term sustainment of the observation stations to be able to develop a climatology of the observations and to detect longer term trends.

Question 2. On May 6, the Departments of the Interior, Agriculture, and Commerce, NOAA, and the Council on Environmental Quality released a preliminary report titled "Conserving and Restoring America the Beautiful" in response to President Biden's Executive Order (EO) on "Tackling the Climate Crisis at Home and Abroad." The EO included direction for the above agencies to create a plan to conserve 30 percent of U.S. lands and waters by 2030. They recommended a "10-year, locally-led campaign to conserve and restore the lands and waters upon which we all depend." The report recommends the creation of an American Conservation and Stewardship Atlas that collects baseline information on the amount and types of lands and waters that are being managed for conservation and restoration purposes. The Council Coordination Committee of the U.S. Regional Fishery Management Councils has formed a subcommittee to work on an atlas of waters already managed for conservation under the Regional Fishery Management Council processes.

2a. As you know, there is a complex suite of existing laws providing the government authority to protect and allow sustainable use of our marine resources. In implementing this order from the President, how will you consider the input of Alaska's resource-dependent communities and prioritize the livelihoods of people who depend on fishing and resource development?

Answer 2a. The America the Beautiful report to the Task Force is the first step in designing a process to solicit public and stakeholder input on a strategy for achieving "30x30." Section 216(a)(i) of EO 14008 directs NOAA, among other Federal agencies, to "solicit input from State, local, Tribal, and Territorial officials, agricultural and forest landowners, fishermen, and other key stakeholders in identifying strategies that will encourage broad participation in the goal of conserving 30 percent of our lands and waters by 2030." Guided by the principles in the report, NOAA will continue to seek input from ocean and coastal stakeholders about how to implement and measure additional conservation.

2b. How does the Alaska National Interest Lands Conservation Act's (ANILCA) "no more" clause factor into the administration's decision to consider designations in Alaska?

Answer 2b. NOAA defers to DOI on this question, as that is under their jurisdiction.

2c. How will you incorporate input from the Regional Fishery Management Councils in the American Conservation and Stewardship Atlas?

Answer 2c. The America the Beautiful report acknowledges the great work of the regional fishery management councils, in collaboration with NOAA and U.S. fishermen, to transparently manage sustainable U.S. fisheries. NOAA Fisheries is currently briefing and taking input from all the Councils. In addition, in response to this effort, the Council Coordination Committee has developed a sub-committee to develop a report on area-based measures for marine fisheries in the United States. We look forward to that report and will continue to work with the Councils as we move forward in this process.

Question 3. In the COVID–19 relief funding that was part of the Consolidated Appropriations Act of 2021, Congress provided the Department of Commerce's National Telecommunications and Information Administration (NTIA) $1 billion directed to Tribal governments for broadband deployment.

3a. There are 231 federally recognized Tribes in Alaska, out of 574 federally recognized Tribes in the United States. The $1 billion provided to NTIA for a Tribal Broadband Connectivity Program could be incredibly beneficial to Alaska, which suffers from a severe broadband deficit across the State. I know that NTIA has been conducting very important Tribal consultations over the last several months, and I thank you for meeting with them and incorporating their input. I would like to hope that the unique situations in Alaska are

being considered and will be included in the final grant program. Could you please provide an update on the stage the Program is in and what you expect next?

Answer 3a. As you noted above and recognizing the special nature of the Nation-to-Nation relationship, early in the grant program development process, NTIA held three virtual Tribal Consultation sessions to hear from Tribal Leaders, which formed the design of the Tribal Broadband Connectivity Program (TBCP). NTIA published the TBCP Notice of Funding Opportunity on Grants.gov on Thursday, June 3, 2021. The application window will close on September 1, 2021.

NTIA is committed to continuing a respectful and productive dialogue as the grant program is implemented. To date, NTIA has held a total of four Tribal Broadband Connectivity Program-specific webinars with a cumulative total of 1,415 registrants to help prospective applicants understand the grant program and to assist applicants in the preparation of high-quality grant applications. In addition, NTIA also intends to hold six more webinars for all interested applicants before the application window closes and release multiple rounds of Frequently Asked Questions based on questions received from interested applicants. NTIA will also conduct focused outreach and communications with Tribal leaders and Tribal stakeholder organizations. On June 30, 2021, NTIA presented the TBCP at the Alaska Regional Tribal Broadband Meeting hosted by the Denali Commission.

Another significant part of NTIA's grant program development and execution is NTIA's work with the State Broadband Leaders Network on all three NTIA grant programs. Alaska's Senior Development Executive in the Department of Commerce, Community, and Economic Development has been involved in these meetings and discussions. NTIA has worked with him to ensure that both the Broadband Infrastructure Program and the TBCP will meet the State's broadband needs. In addition, the State of Alaska has signed a Joint Project Agreement with NTIA to access the data in the National Broadband Availability Map.

Further, NTIA recognizes that there may be instances where a proposed technological solution may not directly meet all aspects of the definition of broadband as stipulated in the funding rules, in particular for latency. For example, in proposed service areas with challenging geography and topography, the only viable technology solution option may have higher latency than what is specified in the definition of qualifying broadband. Given these specific topographical and geographical challenges, which are certainly present in Alaska, NTIA will take that into consideration in its application review process.

As a part of the application review process, NTIA will coordinate with the Federal Communications Commission (FCC) and Department of Agriculture (USDA), as required by the statute, and will also consult the National Broadband Availability Map, to understand whether past or current Federal broadband investments made in a particular area are already providing qualifying broadband service under the statutory definition. This will help NTIA to focus its grant investments on proposed projects for which qualifying broadband service is unavailable in proposed grant funded service areas, which would therefore be eligible for grant funding. NTIA is working with other Federal agencies to coordinate and to ensure that the most current information about the status of an awarded area is taken into consideration before making grant awards. On June 25, 2021, NTIA, USDA and the FCC announced that the three agencies had signed an interagency agreement committing to data-sharing and coordination. The agencies are meeting regularly to develop the processes required to implement the agreement.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

Question 1. Oysters are an essential part of the Chesapeake Bay habitat and economy. However, as a result of disease, overfishing, and degraded water quality, amongst other problems, just 1–2 percent of the historic native oyster population remains. Maryland has had success with shellfish aquaculture in the Bay, where it provides water filtering benefits and has helped in our efforts to increase the oyster population.

The NOAA Chesapeake Bay Office, as part of the Chesapeake Bay Program, is working towards a goal to restore oysters to 10 Chesapeake tributaries by 2025. As of mid-2020, more than 800 acres have been restored around the Bay under this initiative, and to date, 98 percent of the reefs monitored 3 years after restoration meet the standards for a restored reef—an outstanding success rate. A number of recent studies have identified marine aquaculture as a climate-friendly method of producing animal protein for a growing population. Do you support the work NOAA is doing to increase sustainable U.S. aquaculture production as a way to support the

administration's plans to mitigate climate change and restore devastated populations and habitats?

Answer 1. I do support NOAA's work, in partnership with USDA and others, to encourage sustainable aquaculture. Marine aquaculture is among the most "climate-smart" forms of food production, for example producing significantly less greenhouse gas emissions and requiring less (or no) fresh water compared to other farming methods. In addition, shellfish and seaweed, whether farmed or wild, provide a range of ecosystem services that can help mitigate the impacts of climate change. In addition to producing healthy seafood, aquaculture is a key part of NOAA's strategy for habitat restoration and for the recovery of some depleted species.

NOAA has pioneered research to characterize and operationalize the restorative benefits of shellfish and seaweed aquaculture. Through a broader effort to develop Ecosystem-Based Aquaculture Management, NOAA and partners led a recent global-scale analysis to identify where restorative aquaculture opportunities are greatest, indicating substantial potential for growth of bivalve shellfish and seaweed aquaculture along all coasts of the United States to provide restorative environmental and socioeconomic benefits. NOAA is currently serving on a working group led by The Nature Conservancy to define the "Principles of Restorative Aquaculture" alongside representatives from The World Bank, Global Environment Facility, World Wildlife Fund, WorldFish, U.N. Food and Agriculture Organization, and other multinational institutions. This includes research by the National Ocean Service and NOAA Fisheries to quantify the nutrient removal capabilities of oyster aquaculture, which has recently been used by the State of Maryland to develop a shellfish nutrient credit trading program to monetize nutrient removal services from farmed oysters. Further, the Northeast Fisheries Science Center has led cutting-edge research to understand potential wildlife habitat benefits of shellfish aquaculture for native and commercially important wild species.

NOAA is a world leader in environmental modeling and marine field research to support sustainable aquaculture practices. We have developed a range of powerful science-based tools to support sustainable development of shellfish, seaweed, and finfish operations. We have developed tools to predict and avoid potential genetic impacts from escaped fish, and through grant funding have helped to develop stronger cage designs that reduce the likelihood of escapes. We work with the Environmental Protection Agency to develop and use predictive models to avoid impacts of finfish farming on water quality. We have developed spatial planning tools to inform siting and minimize user conflicts. We work with Naval Academy engineers to develop structural engineering guidelines for finfish cages and to explore engineering solutions to avoid entanglement risk. Our work with USDA and other partners to develop alternative ingredients has led to a dramatic reduction in the amount of forage fish in commercial fish feeds.

NOAA's aquaculture research program supported through the NMFS Office of Aquaculture and Science Centers, OAR's National Sea Grant College Program, and NOS's National Centers for Coastal Ocean Science, provide robust scientific information to support confident regulatory decisions that ensure potential negative impacts from marine aquaculture are minimized. As marine aquaculture grows in the United States, there will be a need for additional research and development to further develop and deploy these and other science-based tools to inform the sustainable development of the sector.

Question 2. NOAA is a vital partner in our efforts to restore our Nation's marine sanctuaries and habitats. I've recently learned that NOAA is planning on reprogramming and imposing additional corporate costs that would utilize funding intended for the Office of National Marine Sanctuaries (ONMS) programs. This will have detrimental effects on the newly designated Mallows Bay-Potomac River National Marine Sanctuary that will impact community programs, mission critical operations and initiatives, and reduce the sanctuary programs ability to respond to community and resource management needs.

The Consolidated Appropriations Act of 2021 provides $56.5 million in NOAA's Operations, Research, and Facilities (ORF) funds and $4 million in Procurement, Acquisition, and Construction (PAC) for sanctuaries budget—an increase of nearly $1 million in fiscal year 2020. However, according to directives from the NOAA Office of the CFO, the ONMS funds will be levied with $1.2 million in reprogramming costs to cover other aspects of the NOAA budget. Will you work to protect the Office of National Marine Sanctuaries budget from these administrative costs, which will add to the nearly 20 percent of ONMS funding currently supporting other NOAA costs?

Answer 2. NOAA does not take reprogrammings lightly and only seeks to reprogram funds from a program when there is an unanticipated, critical need elsewhere. These reprogrammed funds were used to support two mission-critical NOAA acquisition projects and prevent noticeable and significant impacts to both weather forecast and watch operations and the operations of the entire commercial weather enterprise. NOAA's mission would have been significantly compromised had no action been taken to address the emergent need. Although reprogrammings of that size are unusual, it is not uncommon for unanticipated costs to arise during the course of the fiscal year. To the greatest extent possible, NOAA seeks to mitigate such issues without imposing additional administrative burdens. In this case, savings from reduced travel in fiscal year 2020 due to COVID helped to offset the impact of these reprogrammings.

Question 3. NOAA's Marine Mammal Health and Stranding Response Program (MMHSRP) coordinates emergency responses to sick, injured, distressed, or dead marine mammals on a national scale. Organizations that make up the Sea Turtle Stranding and Salvage Network (STSSN) are facing increasing demands to respond and rehabilitate federally protected sea turtles, and there is inadequate funding to support this work. Many of the institutions involved in sea turtle recovery do so on a voluntary basis, despite their participation in Marine Mammal Stranding Networks and eligibility for direct support via NOAA's Prescott Grant Program. Unfortunately, due to insufficient funding and the highly competitive nature of the grant, the STSSN is often left without sufficient resources to support response to and care for these federally protected marine species.

An informal survey of eight of the largest sea turtle stranding and response programs on the eastern seaboard found a median annual cost for sea turtle stranding rehabilitation of more than $400,000 per institution. This level of "voluntary" contribution to Federal efforts to protect ESA-covered species is not sustainable. Will you support the creation of a pilot program to provide direct support to institutions who provide sea turtle stranding response and rehabilitation services in support of NOAA's stewardship responsibilities to these federally-protected endangered species?

Answer 3. I would like to clarify that the Prescott Grant Program is authorized solely under the Marine Mammal Protection Act and administered by the Marine Mammal Health and Stranding Response Program (MMHSRP), which only covers marine mammals and not sea turtles (since sea turtles are reptiles). Therefore, the Prescott Grant Program would not be the appropriate way to provide funds for sea turtle emergency response. NOAA Fisheries coordinates the Sea Turtle Stranding and Salvage Network (STSSN) under the authority of the Endangered Species Act (ESA), separate and distinct from the MMHSRP. The STSSN includes permitted partners in States from Maine through Texas, Puerto Rico and the USVI, the U.S. west coast, and Hawaii. The STSSN responds to and documents both live and dead sea turtles that strand in coastal areas. Live stranded sea turtles are placed in permitted rehabilitation facilities for short and/or long-term care depending on their condition. NOAA Fisheries depends on these partners to care for these turtles and release them back to the wild when they are determined healthy. Should funds be appropriated to NOAA for such ESA programs as the STSSN, they could be administered similarly to how the MMHSRP administers the Prescott Grant Program, via a competitive process.

Question 4. MBDA Business Centers, like the Baltimore and Capital Region Business Centers, are responsible for providing MBEs with access to procurement opportunities during the program year. We understand that while the Minority Business Development Agency once provided Business Centers with procurement research software, these software contracts weren't renewed with the service providers and Business Centers have not received an alternative resource in researching procurement opportunities for their clients. This has impacted the Business Centers' ability to identify procurement opportunities for MBEs.

We appreciate that the President's fiscal year 2022 budget request calls for a 46 percent increase to MBDA's funding relative to the fiscal year 2021 enacted level (and note that the Fiscal Year 2022 Congressional Bureau Justification for the Minority Business Development Agency has not yet been provided). Will you work to ensure that MBDA Business Centers have access to the procurement research software that they need to effectively serve their clients and carry out their missions?

Answer 4. In fiscal year 2022, MBDA is committed to exploring options for deploying the latest technology and digital engagement tools that will allow the Business Centers to have access to public and private sector contracting opportunities.

Question 5. We also understand that MBDA Business Centers used to have engagement with the Office of Business Development and the Capital Access Team with assigned MBDA staff, which they found to provide helpful engagement and guidance. Unfortunately, this practice has been removed and the Business Centers only have a light touch point of contact with the agency once a month during the national MBDA Stakeholders call. Does the MBDA have plans to provide Business Centers with additional staff outreach and engagement on a regular basis? If so, what types of additional engagement are contemplated going forward?

Answer 5. Currently, MBDA's Office of Business Development (OBD) staff engages with the Business Centers on various business development and programmatic efforts including access to capital. MBDA has proposed, in its fiscal year 2022 President's budget submission, a $22 million increase over its fiscal year 2021 budget appropriation and a staffing increase of 22 positions that will allow the Agency to improve and increase staff outreach and engagement with Business Centers on regular basis.

With the proposed funding and staff increase in fiscal year 2022, OBD will develop, implement, and support partnerships that help Business Center clients grow in size and scale. OBD staff will also support business development initiatives offered by the Business Centers focused on contracting, financing, and exporting.

SUBCOMMITTEE RECESS

This hearing is now adjourned.

[Whereupon, at 3:08 p.m., Wednesday, May 26, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

WEDNESDAY, JUNE 9, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:01 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chair) presiding.

Present: Senators Shaheen, Leahy, Feinstein, Reed, Coons, Manchin, Van Hollen, Moran, Murkowski, Collins, Graham, Boozman, Capito, Hagerty, and Braun.

DEPARTMENT OF JUSTICE

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. The Subcommittee on Commerce, Justice, Science, and Related Agencies will come to order. Good afternoon, Mr. Attorney General. We are delighted to have you back. And I want to begin by congratulating you and the Department on the recovery of much of the ransomware from the attack on the Colonial Pipeline. That was excellent work and I know everybody in the country really appreciates it. And hopefully it sends a message to those groups out there that would continue to hack our industries and our Government.

The complex and often difficult work of the Department is vast. It ranges from National Security investigations to operating a national prison system, management of billions in grants to State and local entities, and this year, the President's fiscal year 2022 budget request for the Department of Justice is $36 billion, which is nearly 7 percent increase compared to fiscal year 2021. As enacted, this budget provides a renewed focus in critically important areas like the request for increased funding at the Civil Rights Division and Community Relations Service to provide for more attorneys and mediators. It also requests more funding and grant programs that will greatly assist our communities.

I was particularly pleased personally to see nearly double the resources for the Office on Violence Against Women and appreciate the steady support for grant programs that address substance abuse. While I was pleased to see healthy increases nearly across the board for the Department's agencies and programs, I did have some concerns and I appreciated our conversation yesterday, Mr. Attorney General, and I shared some of these with you.

The COVID–19 pandemic has affected everyone, but this has also been a dangerous time for those who have been locked at home with their abusers away from their jobs, friends and family, schools, and other outside assistance like child services visits. Survivors experienced increased levels of violence, including increased threat of lethality. Agencies providing support to domestic violence, sexual assault, and child abuse victims had to quickly pivot to online or telephonic only services as we halted in-person meetings. As pandemic restrictions are being lifted, it is expected that there will be even more of a demand for services like counseling and housing.

And the Crime Victims Fund is often the primary source of Federal funding for thousands of victims service providers across the Nation, including programs serving victims of domestic violence, sexual assault, child abuse, and human trafficking. But due to decreasing receipts in the fund, this funding stream, which provides critical services to survivors, is really in jeopardy. And while I appreciate the increases proposed in your budget request for discretionary grant programs, the $1 billion for the Office on Violence Against Women grants in particular, this budget also proposes a release of nearly $2.7 billion from the fund without recognizing the reality of the dramatic drop in receipts to the fund.

I am hoping to hear your thoughts on the Department's rationale for the spending level and the plan for bolstering the fund in the future. This budget request proposes modest increases to the Department's law enforcement components, with one exception, again something we talked about, the Bureau of Prisons. I understand that there is a drop in the inmate population, but there is still a need for both specialized staffing, like counselors and special education teachers, to meet the needs of the First Step Act, as well as the unique medical needs of an aging prison population. The Department also needs to keep safety in mind.

This subcommittee has continually requested that the Bureau of Prisons work toward curtailing the reliance of augmentation and overtime, and we need reassurance that this request will allow continued hiring of corrections officers. Senator Moran and I both have Federal prisons in our States, and we hear very directly concerns from the corrections officers and employees there about staffing. In closing, I want to let the 115,000 career employees of the Department of Justice, including law enforcement personnel and attorneys, know how much their work to keep Americans safe from crime and terrorism is appreciated, especially during this last year through the COVID pandemic and here in the Capitol in response to the attack on January 6.

In particular, I appreciate the ongoing investigations by the FBI into this event and the peer counseling services that the Marshal Service provided for the Capitol Police. Mr. Attorney General, I look forward to your testimony and to the discussion today. I am sure you will have a lot of interest from the Members of this subcommittee. And with that, I will turn it over to my Ranking Member, Senator Moran.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Thank you very much, Senator Shaheen. Thank you for convening this hearing. This continues our practice of hav-

ing the Attorney General before our subcommittee. And I appreciate the General Garland accepting our invitation. And I thank you for your outreach to me and my team since you became the General. Welcome to CJS subcommittee.

I am pleased to hear and discuss with you today the President's budget request and the activities of the Department of Justice. Over the past few years, I have had the opportunity to meet many special agents, correctional officers, intelligence analysts, and attorneys that make up those 115,000 employees that Senator Shaheen referenced. I am impressed by their professionalism, their integrity, their commitment to the Department's mission, and to our Nation.

The Department of Justice is requesting $35.3 billion in fiscal year 2022. This is an increase of $1.9 billion or a 5.6 percent increase above fiscal Year 2021 enacted levels. The overwhelming bulk of this increase is dedicated to DOJ grant programs, while DOJ law enforcement agencies, the FBI, the DEA, the U.S. Marshal Service, and ATF will only receive 2 percent increase overall. In a year in which the administration allowed agencies to request expansive budgets, the increase at the Drug Enforcement Agency is barely enough to cover inflation. I request—the request will do nothing to reverse the 13 percent decline in the number of special agents since 2010.

The DEA is on the front lines against sophisticated and ruthless drug traffickers and cartels, and the methamphetamine and opioid crisis continues to wreak havoc and terrible damage on communities in Kansas and across the country. I am troubled by the lack of attention given to DEA in this budget request. Similarly, the Department requests an increase of only $40 million to bolster the FBI's cyber capabilities. This is less than one half of 1 percent of the FBI's budget.

As recently observed by Chris Krebs, the former—formerly the Government's top cybersecurity watchdog, we are in the midst of a ransomware pandemic, one that threatens our food supply and one that threatens our energy infrastructure. I question whether the Department is sufficiently investing in efforts to address these threats. Finally, I am disturbed by the proposals to dramatically expand the Department's authority to regulate the ownership of firearms by law abiding citizens. The administration has proposed repealing numerous provisions that were enacted in previous CJS bills that passed with overwhelming bipartisan votes.

In the context of other recent actions by the White House and the ATF, it is difficult to see these proposals as anything but a broad assault on the Americans' second right amendment—excuse me, the Americans' Second Amendment rights—citizens more clearly. In the context of other recent actions by the White House and the ATF, it is difficult to see these proposals as anything but a broad assault on Americans Second Amendment rights. With that said, there are many areas of this budget request in which I believe we find agreement.

I am pleased to see the Department has endorsed the new grant programs dedicated to improving police community relations that Senator Shaheen and I worked together to create last year. These programs include support for de-escalation training, training on responding to individuals facing mental health crisis, and support for

local agencies to secure accreditation. Attorney General Garland, I look forward to working with you and with Senator Shaheen and my colleagues on this subcommittee as we work to craft the fiscal year 2022 appropriations for the Department of Justice. And again, I thank you for your presence.

Senator SHAHEEN. Thank you very much, Senator Moran. I will now turn it over to you, Mr. Attorney General, for your opening statement. And I don't think your mike is on.

STATEMENT OF HON. MERRICK B. GARLAND, ATTORNEY GENERAL, DEPARTMENT OF JUSTICE

Attorney General GARLAND. Good. Okay. Good afternoon, Chairwoman Shaheen, Ranking Member Moran, and distinguished Members of this subcommittee. Thank you for the opportunity to appear before you on behalf of the Department of Justice to discuss the President's budget for fiscal year 2022. Exactly 90 days ago, I took the oath of office as Attorney General. On that day, I spoke to all the Justice Department employees, and I told them that all of us, "are united by our commitment to protecting our country, as our oath says, from all enemies, foreign and domestic, and by our commitment to enforcing our country's laws and to ensuring the civil rights and the civil liberties of our people."

These commitments reflect the Justice Department's mission, and the Department's mission is reflected in our fiscal year 2022 budget request. Our two top funding priorities are as follows. The first is keeping our country and our communities safe. This priority has three main elements. The first element is countering foreign and domestic terrorism. The Justice Department remains acutely aware of the threat posed by foreign terrorist organizations. This requires that we never take our eyes off the risk of another devastating attack on our country. At the same time, the United States has seen a troubling rise in domestic violent extremism. As a country's lead law enforcement agency, the Department of Justice is devoted to a broad scale approach to countering the threat of both foreign and domestic terrorism. The fiscal year 2022 budget request includes $9.4 billion—I am sorry, skipped a page.

Our budget request includes more than $1.5 billion for our foreign and domestic counterterrorism efforts, an increase of more than 12 percent above the fiscal year 2021 enacted level. Keeping our country and communities safe also requires countering cyber threats from foreign and domestic actors, whether nation states, terrorists, or criminals, something that each of the two of you have already mentioned in your opening.

The budget request for $1.1 billion would be the largest increase in cyber resources for the Justice Department in more than a decade. Finally, keeping our country and communities safe requires protecting them from the recent increase in major violent crimes and gun violence. The Department's recently announced violent crime reduction strategy harnesses all our relevant Departmental components to that end.

The fiscal year 2022 budget request includes $9.4 billion, an increase of nearly 9 percent to support the Justice Department's law enforcement resources and grant programs. This includes law enforcement efforts to fight violent crime and grants that fund com-

munity violence intervention programs, improve background checks, and red flag laws. The Department's other top priority is reflecting—is protecting civil rights and civil liberties. The President's fiscal year 2022 budget requests more than $300 million for the Department's civil rights efforts. This includes the largest investment in a decade to reinvigorate the Justice Department's civil rights components and the largest ever increase in our civil rights division, totaling more than 15 percent.

Our request reflects the reality that almost 65 years after its creation, the division's work remains vital to protecting the American dream by safeguarding voting rights, prosecuting hate crimes, and addressing unlawful discrimination. This additional support for our civil rights work would also allow us to reestablish the office for access to justice and would provide a much needed lifeline for our community relations service, which helps local communities mediate conflicts peacefully.

The budget request also provides new funding for the Environment and Natural Resources Division to advance environmental justice and to tackle climate change. Promoting public trust between communities and law enforcement is critical both to making our communities safe and to ensuring the protection of civil rights. Our budget request for $1.3 billion, an increase of $379.8 million, would provide grants to support reforms necessary for promoting that trust. The fiscal year 2022 budget also provides funding for other extraordinarily important grant programs. It proposes an investment of $1 billion to support Violence Against Women Act programs at DOJ, nearly twice the fiscal year 2021 level. It proposes to almost double the programs that provide training and technical assistance for State, local, Tribal, and territorial law enforcement in responding to hate and bias motivated crimes.

And we are also focused on reducing the immigration court backlog. A 21 percent budget increase to the Executive Office for Immigration Review will help us on board 100 new immigration judges to reduce the nearly 1.3 million cases that were pending before the immigration courts when we took office. I ask for your support for our budget, as the Justice Department continues its commitment to adhering to the rule of law, to keeping our country and communities safe, and to protecting civil rights and civil liberties. Thank you.

[The statement follows:]

PREPARED STATEMENT OF HON. MERRICK B. GARLAND

Good afternoon Chairwoman Shaheen, Ranking Member Moran, and distinguished Members of this subcommittee. Thank you for the opportunity to appear on behalf of the Department of Justice to discuss the President's budget request for fiscal year 2022.

Exactly 90 days ago, I took the oath of office as Attorney General. In remarks to all Justice Department employees on my first day in office, I explained how I would approach my job:

> "All of us are united by our commitment to the rule of law and to seeking equal justice under law. We are united by our commitment to protecting our country, as our oath says, 'from all enemies foreign and domestic,' and by our commitment to enforcing our country's laws and to ensuring the civil rights and the civil liberties of our people."

This approach reflects the Justice Department's mission, and the Department's mission is reflected in our $35.3 billion fiscal year 2022 budget request. Our top funding priorities are:

1. *Keeping our Country and Communities Safe.*—This includes funds for:

Countering Foreign and Domestic Terrorism.—The budget contains more than $1.5 billion to counter foreign and domestic terrorism—an increase of more than 12 percent above the fiscal year 2021 budget—which includes an additional $101.2 million to address domestic terrorism with a broadscale approach across the Department.

Enhancing Cybersecurity and Fighting Cybercrime.—The budget includes $1.1 billion, a $150.7 million increase, for protecting our Nation from cyberattacks and cybercrime. This is the largest increase in cyber resources for the Justice Department in more than a decade.

Combating Violent Crime and Gun Violence.—The budget also contains $9.4 billion, an increase of more than 8 percent, to combat violent crime and gun violence. This includes more than $1 billion in grants to support local, State, and Tribal law enforcement agencies and community organizations in their efforts to achieve safer communities.

2. *Protecting Civil Rights and Civil Liberties.*—Another top Department priority is protecting civil rights and civil liberties. This includes:

Reinvigorating the Department's Civil Rights Components.—The budget contains a total of more than $300 million to reinvigorate civil rights efforts across the Justice Department, including in the Civil Rights Division and the Community Relations Service, and to reestablish and expand the Justice Department's Office for Access to Justice. This budget marks the largest investment in civil rights in at least a decade and the largest-ever increase for the Department's Civil Rights Division, totaling more than 15 percent.

Investing in Community Policing.—The budget contains a total of nearly $1.3 billion, with program increases of $379.8 million, to support reforms designed to further strengthen relationships between law enforcement and the communities they serve. This investment is important both for keeping our communities safe and for protecting civil rights and civil liberties.

Ending Gender-Based Violence.—The budget contains a total of $1.0 billion, an increase of $486.5 million, to address gender-based violence through the Office on Violence Against Women, nearly twice the fiscal year 2021 investment in this effort.

Addressing Inequities in the Criminal Justice System.—A total of nearly $1.6 billion is requested to support reform in the criminal justice system and to continue critical investment in implementing the First Step Act of 2018. This request includes an increase of more than $550 million in grants that support efforts to reform State and local justice systems.

*Advancing Environmental Justice.*The budget also contains new resources to advance environmental justice initiatives.

Other areas of Departmental focus include:

3. *Ensuring Economic Opportunity and Fairness*

Reinvigorating Antitrust Enforcement.—This budget requests more than $200 million, an increase of 9 percent, for the Antitrust Division to reinvigorate antitrust enforcement.

Combating Fraud and Protecting Consumers.—The Justice Department is committed to using every available Federal tool—including criminal, civil, and administrative actions—to protect consumers and combat and prevent fraud. As part of this budget request, additional funds would be available for three DOJ components—our United States Attorneys, the Criminal Division, and the Civil Division—to combat COVID–19 related fraud and bring to justice those who seek to profit unlawfully from the pandemic.

Revitalizing Tax Enforcement.—An increase of nearly 5 percent above fiscal year 2021 is requested for the Department's Tax Division to support its vital mission of enforcing our tax laws fully, fairly, and consistently. The integrity of our tax system is vital to maintaining public confidence and requires ensuring that all Americans pay the taxes they owe.

4. *Reducing the Immigration Court Backlog*

The budget also requests a total of $891 million, an increase of more than 20 percent, to reduce the immigration court backlog. This funding would strengthen our ability to apply the immigration laws justly, consistently, and in a timely fashion, while ensuring due process under the law.

* * *

Greater detail on all of these priorities is provided below:

1. *Keeping our Country and Communities Safe*

Countering Foreign and Domestic Terrorism.—Our budget supports the Justice Department's steadfast commitment to protecting our national security, while also protecting our civil liberties.

As I testified before the full Senate Appropriations Committee last month, the United States has seen an unprecedented and troubling rise in domestic violent extremism. At the same time, the Justice Department and its law enforcement agencies remain acutely aware of the threat posed by foreign terrorist organizations. This requires that we never take our eyes off the risk of another devastating attack on our country by foreign terrorists. It also requires that we counter threats from foreign actors who conduct espionage, target Americans, including our service members and diplomats overseas, and violate the sovereignty and territorial integrity of our allies.

As the country's lead law enforcement agency, the Department of Justice is devoted to a broadscale approach to counter the threat of both foreign and domestic terrorism. The request includes more than $1.5 billion for our foreign and domestic counterterrorism efforts, which represents an increase of more than 12 percent above the fiscal year 2021 enacted level.

Alongside our request for resources to counter the threats posed to our security by foreign terrorism, the budget seeks an additional $101.2 million to address domestic violent extremism and terrorism. Our request includes increased funding for the Federal Bureau of Investigation (FBI) to conduct domestic violent extremism and terrorism investigations, and for the United States Attorneys to manage increasing caseloads in this area. The budget request supports additional response capabilities at the U.S. Marshals Service and research regarding the root causes of domestic radicalization at the National Institute of Justice.

Enhancing Cybersecurity and Fighting Cybercrime.—Protecting our national security also requires countering cyber threats from foreign and domestic actors—whether nation states, terrorists, or criminals—who seek to conduct espionage, invade our privacy, attack our elections, steal our intellectual property, damage our critical financial and physical infrastructure, or extort ransom payments.

These threats are grave and escalating, and we must keep pace with an ever-evolving threat landscape. A complete review of the Department's cybersecurity strategy is currently underway, and this budget—which would provide more than $1 billion to support cyber investigations and cybersecurity, including more than $150 million in cyber program enhancements—would help us to meet these threats. This is the largest increase in cyber resources for the Department in more than 10 years.

Combating Violent Crime and Gun Violence.—Protecting our communities from the recent increase in major violent crimes and from the national epidemic of gun violence is among the most pressing challenges facing the Department of Justice. The Department's recently announced violent crime reduction strategy harnesses all our relevant components to that end, including the Department's U.S. Attorneys' offices, litigating divisions (including the Criminal Division), law enforcement agencies, and grantmaking offices. The fiscal year 2022 budget request includes $9.4 billion, an increase of more than 8 percent above the 2021 enacted level, to support the Justice Department's law enforcement resources as well as grants that fund community violence intervention programs, improved background checks, and red-flag laws.

A total of nearly $1.6 billion in base funding is requested for the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), an increase of $70 million or nearly 5 percent over fiscal year 2021, to oversee the safe sale, storage, and ownership of firearms and to support the Agency's other work to fight violent crime. A portion of this increase would both expand ATF's Crime Gun Intelligence through the National Integrated Ballistic Information Network (NIBN)

and would nearly double ATF's capacity to investigate theft from Federal Firearms Licensees (FFLs). Every firearm stolen from an FFL poses a threat to community safety, as well as to our law enforcement partners.

In addition, a total of $690 million is requested for the Drug Enforcement Administration to support the fight against violent drug gangs and cartels.

This request would enable the Department's Office of Justice Programs to distribute more than $1 billion in grants to support local, State, and Tribal law enforcement agencies and community organizations in their efforts to achieve safer communities and combat the gun violence epidemic. Part of this requested funding would strengthen existing funding programs, including grants for States, local communities, and Tribes to improve criminal history record information and ensure effective nationwide implementation of background check systems.

New programs are also proposed.—A highlight is $100 million for the Community Violence Intervention Initiative, to assist local communities in developing comprehensive violence prevention and reduction programs, through partnerships between community residents, law enforcement, local government agencies, and other community stakeholders. Using evidence-based solutions such as street outreach, violence interrupters, and hospital-based violence intervention services, the Community Violence Intervention Initiative invests directly in communities to address gang and gun violence.

The budget request also includes funding that would allow the Department to establish innovative new grants for States that want to craft gun licensing and red-flag laws, which temporarily restrict access to firearms by individuals who are in crisis. A new pilot promotes the development, adoption, and use of programs designed to help communities address situations where people become legally prohibited from possessing firearms they own.

2. *Protecting Civil Rights and Civil Liberties*

Reinvigorating the Department's Civil Rights Components.—Protecting civil rights and civil liberties was a founding purpose of the Justice Department and is a top budgetary priority. Far too many still face discrimination in housing, education, employment, and the criminal justice system; and bear the brunt of the harm caused by pandemic, pollution, and climate change.

The President's fiscal year 2022 budget requests an increase of more than $300 million to reinvigorate the Department's civil rights efforts. The Department requests a total of $183.2 million, an increase of 15.8 percent, for the Civil Rights Division (CRT). This would fund 85 new positions—including 60 attorneys—to increase CRT's capacity to protect voting and other statutory and constitutional rights, and to hold those who commit hate crimes accountable.

Among other things, this request would also fund $90 million in grants to support the development, expansion, and improvement of services for victims of human trafficking and for the investigation and prosecution of trafficking offenses as part of a multidisciplinary approach.

The President has called for, and the Justice Department is developing plans for, reconstituting the Department's Office for Access to Justice. The budget requests $6 million dollars for this purpose. One role of the Office will be to leverage grant opportunities throughout the Department aimed at increasing access to justice. The fiscal year 2022 request includes several grant programs that would improve access to justice for underserved groups, including grant programs to strengthen the vital work of public defenders, improve juvenile indigent defense, and ensure legal services for victims of domestic violence and sexual assault.

For decades the Department's Community Relations Service (CRS) has been "America's Peacemaker" for communities in conflict. Its staff are trained to mediate disputes and enhance community capacity to prevent and resolve future conflicts independently. When I arrived at the Department, CRS had only a fraction of the conciliators needed at a time of heightened racial tensions and increased hate-based incidents. We are reviving CRS's capacity to improve police-community relations and support communities across the United States that are working to prevent and respond to bias incidents and hate crimes.

In addition, a new grant program to advance civil rights would provide $20 million for law enforcement agency training on racial profiling, the duty to intervene, and de-escalation.

Investing in Community Policing.—Creating strong, positive ties between law enforcement agencies and the communities they serve is critical both to making our communities safe and to rooting out inequities in the justice system. Pro-

viding resources to police departments to help them reform and gain the trust of communities is a priority of this Department and this administration. The budget total for programs that support community-oriented policing and address systemic inequities is nearly $1.3 billion, with program increases totaling $379.8 million.

This includes more than $513 million for the Edward Byrne Memorial Justice Assistance Grant (JAG) Program and a total of $651 million for the Department's Office of Community Oriented Policing Services (COPS). Among other things, the budget requests a total of $537 million—an increase of $300 million—for a critical hiring program administered by COPS. New priority preferences would ensure that resources are used to further policing reform efforts. The Department's budget addresses the need to further strengthen relationships between communities and police officers by providing grants for hiring local police officers and investing in racial sensitivity, hate crime, and implicit bias training.

The fiscal year 2022 budget request includes a total of nearly $50 million to support the use of body worn cameras by law enforcement officers across America. For the first time, the budget requests $13.6 million to support the use of body-worn cameras by federally deputized task force officers. And an additional $35 million in grants for State and local body-worn camera systems included in this budget request would support the purchase and deployment of these important systems, assist in the development of infrastructure to support them, and scale up training and technical assistance to ensure their proper use.

The fiscal year 2022 budget request also recognizes the pressing need for capacity-building within State, local, Tribal, and Territorial law enforcement to address hate crimes and violence against women. The budget proposes to almost double programs that provide training and technical assistance in responding to and investigating hate and bias-motivated crimes. And it would invest $80 million in programming aimed at treating domestic violence, dating violence, sexual assault, and stalking as serious violations of criminal law, through increased coordination between law enforcement, victim services providers, and non-governmental organizations.

Ending Gender-Based Violence.—The President's budget request includes an historic investment to support the work of the Justice Department's Office of Violence Against Women (OVW). The COVID–19 pandemic has exacerbated gender-based violence and sexual assault for many women and girls who have been largely confined to their homes with their abusers. The fiscal year 2022 request proposes an investment of $1 billion to support Violence Against Women Act (VAWA) programs at DOJ, nearly twice the $486.5 million enacted level for fiscal year 2021.

The budget request includes substantial increases for longstanding VAWA formula programs that have shown success, including programs aimed at enhancing States' and territories' ability to finance coordinated community responses to domestic violence and sexual assault and enable rape crisis centers and other supporting nonprofit and nongovernmental organizations to serve tens of thousands additional victims each year.

The budget also requests double the amount allocated for the Transitional Housing Program last year to meet the overwhelming demand, which has increased dramatically over the past year as a result of the COVID–19 pandemic.

The request includes two new programs that meet special needs. The first would enable OVW to develop and maintain a National Deaf Services Line, which would provide virtual services to Deaf victims of all VAWA crimes, provide technical assistance to victim service providers working with Deaf victims, and pilot strategies to expand "for Deaf, by Deaf" in-person services. The second program would address violence against women in Indian Country, by providing funding to cross-designate Tribal prosecutors as Tribal Special Assistant United States Attorneys.

The fiscal year 2022 request would fund several other innovative new programs as well. Highlights among the funding requested for innovative new programs includes: $20 million to support underserved colleges and institutions to strengthen their responses to domestic and sexual violence and stalking; $2 million to support greater outreach to, and services for, transgender victims of domestic/dating violence, sexual assault, and stalking; and $25 million to enable OVW to study the efficacy of restorative justice programs in addressing underreporting of sexual assault, domestic violence, and dating violence by offering victims an option for accountability while responding to their concerns about how they will be treated by the criminal justice systems.

Often, small community-based organizations miss out on Federal grants that could increase their effectiveness and reach. The fiscal year 2022 request designates $5 million to provide capacity-building training and technical assistance that would help community-based organizations apply for and successfully implement Federal grant awards in order to directly address this problem.

In addition to expanded funding for OVW programs, the budget request also includes $120 million for the Sexual Assault Kit Initiative and a new Regional Sexual Assault Investigative Training Academies program to support efforts to eliminate the rape kit backlog. And an additional $112 million has been requested for the DNA Analysis and Capacity Enhancement Program, which assists with the processing of DNA samples in laboratories and law enforcement agencies across the country and would reduce the backlog in the processing of sexual assault kits.

Addressing Inequities in the Criminal Justice System.—The Department's fiscal year 2022 budget invests nearly $1.6 billion to support criminal justice reform, an increase of $669.3 million over fiscal year 2021 levels.

Our budget request takes several additional steps to support criminal justice reform in the Federal system. It continues the historic investment of $409.5 million by the Federal Bureau of Prisons for First Step Act implementation. The Office of the Pardon Attorney is also seeking an increase to address the backlog of cases and better support the clemency program. And the Department is requesting additional funding to implement Executive Order 14006 and eliminate the use of privately-operated Federal criminal detention facilities by transferring those individuals who are in privately-operated Federal facilities to alternative Federal, State, and local facilities.

The budget request also includes several reform-oriented grants for State, local, Tribal and Territorial entities distributed by the Office of Justice Programs. More than $450 million increase in funding would be directed to programs focused on youth. Among other things, these grants would assist local communities in developing comprehensive youth-focused violence prevention and reduction programs, as well as effective alternatives to incarceration. To assist young people who are involved in the justice system, the Juvenile Justice Prosecution and Defense Process Improvement Program would grow to $40 million in fiscal year 2022, up from $2.5 million in fiscal year 2021. This funding would support training and technical assistance for public and appointed juvenile defenders. At the same time, this budget request includes a significant boost in the Department's Part B: Formula Grants program to increase prevention and intervention programs for youth, ensure appropriate accountability for delinquent behavior, and improve the juvenile justice system.

Increases for programs targeted at adults, including programs under the Second Chance Act, would help State, local, and Tribal corrections and public safety agencies to implement and improve a variety of critical reentry services. The fiscal year 2022 budget also requests an increase for the Justice Reinvestment Initiative, which would assist State and local justice stakeholders in developing and implementing innovative and research-based responses that address a range of criminal justice system programs.

Our request also funds programs designed to divert individuals with drug addiction out of the criminal justice system, including through increased support for drug courts, mental health collaborations, and residential substance abuse treatment. The funding request includes a total of $418 million in grants under the Comprehensive Addiction and Recovery Act (CARA), which would, among other things, support system-wide initiatives that expand locally-driven responses to identify, treat and support those impacted by substance abuse.

Advancing Environmental Justice.—The Department is committed to advancing environmental justice and supports the President's Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad." The Executive Order establishes a "whole-of-government" approach to addressing the climate crisis and formalizes the government's commitment to environmental justice.

The fiscal year 2022 budget requests $44.0 million to advance environmental justice, tackle climate change, and enhance environmental sustainability. This includes increased funding for the Environment and Natural Resources Division to expand its affirmative authorities to advance environmental justice and to address the impact of climate change by reducing greenhouse gas emissions and other pollutants. It also provides funds for continuing defensive and other work related to climate change. In addition, with this support would allow the Bureau of Prisons to invest an additional $39 million energy-saving modernization and repair projects to replace aging equipment with energy efficient models.

3. *Ensuring Economic Opportunity and Fairness*

Reinvigorating Antitrust Enforcement.—America's antitrust laws are our country's charter of economic liberty. For more than a century, the Justice Department's Antitrust Division has been entrusted with their enforcement. The President's request to increase the Antitrust Division's budget by 9 percent to a total of more than $200 million reflects our commitment to that vital mission. Every year, the Justice Department's enforcement of our antitrust laws saves consumers millions and perhaps billions of dollars. The fiscal year 2022 budget request would allow the Department to onboard 90 additional personnel, including 49 attorneys, to advance these efforts to ensure economic opportunity, protect American consumers, and safeguard taxpayer dollars from collusion.

Combating Fraud and Protecting Consumers.—The Justice Department is committed to using every available Federal tool—including criminal, civil, and administrative actions—to protect consumers and combat and prevent fraud. As part of this budget request, the Criminal Division and U.S. Attorneys' Offices would receive an additional $36.4 million to bolster efforts to prevent COVID–19 related fraud and bring to justice those who seek to profit unlawfully from the pandemic. And an additional $4.8 million is requested for the Civil Division to address increased workload associated with the COVID–19 pandemic, including the pursuit of those who exploit this pandemic to take advantage of the government of their fellow Americans.

Revitalizing Tax Enforcement.—The integrity of our tax system is vital to maintaining public confidence and requires ensuring that all taxes that are owed are paid. Honest taxpayers must be able to trust that they will not bear an undue share of the Federal tax burden. An increase of nearly 5 percent is requested for the Department's Tax Division to fully fund its vital mission of enforcing our tax laws fully, fairly, and consistently with all available tools.

4. *Reducing the Immigration Court Backlog*

The fiscal year 2022 budget strengthens the ability of the Justice Department to apply the immigration laws justly, consistently, and in a timely fashion, while ensuring due process under the law. The $891 million budget request for the Department's Executive Office for Immigration Review includes more than $177 million in much-needed immigration-related program enhancements.

At the beginning of this administration, there were nearly 1.3 million outstanding cases before the immigration courts—the largest ever pending caseload. This budget would allow the Executive Office for Immigration Review to onboard a total of 600 new staff, including 100 new immigration judges. This would bring the total number of immigration judges to 734, an increase of 16 percent. New modernization and efficiency measures would also help reduce the backlog.

To help ensure due process in immigration proceedings, the Department's Office of Justice Programs would administer a $15 million pilot program to provide access to legal representation for immigrant children and families who seek asylum and other forms of legal protection in the United States after entering at the borders.

* * *

I ask for your support for our budget as the Justice Department works to ensure adherence to the rule of law, to keep our country and communities safe, and to protect civil rights and civil liberties.

Thank you.

Senator SHAHEEN. Thank you very much. We will have 5 minute rounds for questions, and we will take senators in order of arrival. So I will begin, followed by the Ranking Member. As I said in my opening statement, Attorney General, I am very concerned about what happens to the level of support in the Crime Victims Fund.

Senator Leahy and I sent you a letter in March on this issue after your confirmation as Attorney General. And I know we are both, as is the subcommittee, very interested in the steps that the Department has taken to address the level of funding in the Crime Victims Fund and how you see that moving forward.

Attorney General GARLAND. So I appreciate both the letter and the questions that you and I were able to discuss yesterday. I have a personal commitment to that fund. That is the fund that provided the money for Oklahoma City victims, so I know full well how important it is to everyone who is a victim of this kind of crime or any crime. So I have looked into it, and I have been given to understand that given the receipts we expect to bring in this year and through fiscal year 2022, at the end of 2022, we should have about a $400 million balance.

That is, we do not expect the fund to run out and we expect to have a balance. Now, I also agree with you, we ought to build up that fund further. So we are going to be looking in the Department of Justice and the ways to do that. I understand there are some legislation pending, possibly adding additional crimes that would feed into the fund.

And of course, we will look into also other issues that you raised about taking certain kinds of pleas and taking certain kinds of delayed pleas that might have not resulted in restitution. The most important thing in these matters is for there to be sufficient restitution for the victims.

Senator SHAHEEN. And as the result of the pandemic, have there been more requests for assistance from the fund over the last year? Do you know the answer to that?

Attorney General GARLAND. I don't know the answer. All I do know is that we expect that the receipts that we have received already to be sufficient to provide the $400 million. But I don't I don't know the answer. That is a very good question.

Senator SHAHEEN. Perhaps you could find that out and share that with the subcommittee. That would be interesting to know.

Attorney General GARLAND. Sure. My staff will get back to yours.

Senator SHAHEEN. Thank you. The other question we discussed in our phone conversation was the request for the Bureau of Prisons. And as you know, the question—the practice known as augmentation is something that this subcommittee has been concerned about for a while. It is certainly something I hear about from prison employees in New Hampshire. And so can you tell us what the Department is doing to address and curtail augmentation?

Attorney General GARLAND. Yes, I will have to admit that that was a word I had never heard of before I became Attorney General.

Senator SHAHEEN. Yes, me either.

Attorney General GARLAND. Okay, fair enough. So I have looked at this and I am, of course, concerned about this. It is protection of both the staff and the inmates that require that we have the right number of staff in the Bureau of Prisons. So what I understand is that we are currently at 95 percent of authorized positions filled. So there will always be a percentage because of attrition, etcetera, but they have made dramatic increases in the number of hires, to the point that BOP hired 900 net new staff, accounting for attrition, since last May and since the previous May, and 281 net new hires in this past month alone.

Now, it will likely always be the case that we won't get up to the full numbers. But the idea with augmentation is that people who switch into guard work or protective work have already been trained in that. We are not going to be sending people who are

without the training. We also expect, of course, that with the number of inmates reduced, that we will have less of a problem of the kind that you describe.

Senator SHAHEEN. I certainly hope so. Can you—I know that vaccinations have been a concern and with some of the employees and corrections officers in our prison in New Hampshire. Do you have any idea if that has been an issue in other prisons around the country?

Attorney General GARLAND. Yes, so it certainly was an issue everywhere around the country, and not only in prisons, but with—in the community as a whole. And I have looked into that as well. So with respect to inmates, 95 percent have been offered vaccines. Now, unfortunately, as with the community as a whole, not everyone accepts. But as of right now, at least 52 percent have received at least one vaccine dose.

With respect to the Bureau of Prisons staff, 100 percent have been offered vaccines. 51 percent are fully vaccinated. And another 661 have received—in addition to that, have received their first vaccine dose. So we are in the right direction here but there is the same problem that there is in the community at large, some resistance to this, which frankly, I do not understand. I rushed out to get my vaccine as soon as it was available. But right now we have enough vaccines for everybody who is willing to take it.

Senator SHAHEEN. And is there any consideration around trying to better engage with staff and I assume inmates, but particularly staff around why this is important and the difference that it can make for them?

Attorney General GARLAND. Absolutely. Education on this issue, as with the CDC's general effort to educate the general population, is ongoing and we don't want this to be a problem, obviously, for the protection of our staff and for our inmates. And so we are going to do everything we can to induce people, incentivize people to take the vaccines.

Senator SHAHEEN. Thank you very much. Senator Moran.

Senator MORAN. Thank you, Senator Shaheen. General, shortly after the President's inauguration, the President issued an executive order on the renewal of DOJ contracts with privately operated criminal detention facilities. I believe that applying this executive order to the U.S. Marshals Service is a serious mistake. Unlike the Bureau of Prisons, which I assume the administration really was directing their attention to, I am not sure of that of course, the Marshals don't own any of their own facilities. They exclusively contract with the Bureau of Prisons, State and local prisons, and jails and private facilities. Closing private facilities will inevitably require Federal prisoners to be housed at facilities further from courthouses in which their cases are being considered. There are ethical and constitutional concerns with moving prisoners potentially far distances from their families and legal counsel.

However, we are now also learning that this policy will cost hundreds of millions of dollars for U.S. taxpayers. The Department's budget request estimates that implementation of the executive order will cost the U.S. Marshal Service $75 million in additional transportation housing costs, and that is just for fiscal year 2020. So my question, General, is, has the Department consulted with

the White House about those costs, and what I think is unintended consequences of applying the executive order to the U.S. Marshal Service?

Attorney General GARLAND. Thank you. Thank you for your question. There is a principle involved here, leaving aside the specifics of the issue you are raising about the Marshals. The administration's policy, and I believe to be the correct policy, is that prison is Government work. It is a Government function, and it contravenes sometimes the due process clause to be keeping people in privately owned areas which are not responsive to all of the requirements of Federal law, and which are not as easy for us to supervise as they would be if they were Federal employees. Now, that said, you put your finger on the correct distinction, which is relatively easy for us to have done this with respect to the Bureau of Prisons, because there was already a Bureau of Prisons space.

With respect to Marshals, as you point out, this was contracted space. So we have a plan of phasing the Marshals part of this in over a somewhat longer period. The money is to move them from private space to State or local Government space so that we still are satisfying our concern that this be a Government function. You are right about the amount, but this is the amount necessary to transfer the people from one to the other. I don't think this will be a problem in the longer run.

I also completely agree with you that it is important to have particularly detention areas near where somebody lives. It is important from the point of view of family connections and continuing connections to the community. And it is also important from the point of view of having appropriate legal representation and lawyers, defense lawyers not having to travel so far that they are unable to do that. So your concerns are my concerns.

Senator MORAN. I appreciate hearing that. And I would ask if you could share with me the outline of the plan for moving forward as it regards—in regard to the Marshals.

Attorney General GARLAND. My staff will get back yours.

Senator MORAN. Thank you. Thank you, sir. The tragic death of Judge Esther Salas last July impressed on me and others the extraordinary threats that our Federal judges face. Last year, I worked to provide additional funding to the U.S. Marshal Service for judicial security operations. The Department's budget this year, it is for fiscal year 2022, includes a program increase of thirty $33.4 million to further enhance Marsha judicial security programs.

I would expect you to be very knowledgeable of the circumstances that judges face in regard to their security. And I would expect you to have a well-informed perspective on this. General Garland, what can you tell us the subcommittee about the proposed program increases and the need for additional investment in Federal judge security?

Attorney General GARLAND. Well, you have pointed your finger at the right person. I was on the Judicial Security Committee for many years when I was a judge, and I was also chair of the Executive Committee, which oversees the other committees, including the Security Committee. So I have dealt very deeply into this problem with respect to judicial security. And it is a big problem and there

is a dangerous problem. And as we have a rise in domestic violent extremism, it is a serious threat. We are—this amount of money we believe will enable us to upgrade the home security systems and to provide Marshals intelligence for better tracking threats against judges. And you can be assured I take this one also quite personal.

Senator MORAN. Well, thank you for that. Thank you for recognizing the importance of security. From my perspective, it certainly security for the judges and their families, but it is also a threat against our system of Government. Judges need to be safe and secure, and the threats need to be addressed seriously, both protection and ultimate prosecution of perpetrators.

Attorney General GARLAND. This is exactly right. You can't have a democracy with due process of law if judges are afraid to make the decisions.

Senator MORAN. I almost said democracy General, but every time I start to see democracy, I remember a republic and it confuses me as to how I am supposed to phrase these questions. So thank you for saying that we live in a democracy.

Attorney General GARLAND. Republic is a representative democracy. I think that is what Hamilton meant.

Senator MORAN. Thank you for the clarification. My time has expired. I would indicate to you both to the Chairman and to you, General, that I also am the Ranking Member of the Senate Committee on Veterans Affairs that is meeting this afternoon. You will see me here intermittently. It is not by lack of interest in what you have to say.

Attorney General GARLAND. Thank you.

Senator SHAHEEN. Thank you very much, Senator Moran. I should have announced at the beginning that the witness has requested a brief recess, about 3:15 p.m. So we will take a short recess at 3:15 p.m. at his request. And when I said we were going to take people in order of arrival, I lied. I am actually going to take the Chairman of the Committee next, Senator Leahy, as is our custom. Senator.

Senator LEAHY. Thank you. I appreciate that and you may recall I did the same thing before as chairman but with others. It is good to see you, Attorney General. And I agree, Senator Moran that we want to have security for our courts and judicial personnel, just as I hope that we will finally get all the answers of what happened January 6. So we will have security of our, really the symbol of our democracy, the U.S. Capitol, the thousands of people who work here, the men and women, tourists and everybody else, and I hope that we will finally get the answers to everything behind that.

Attorney General, in the past few weeks, your Department has endured some highly controversial positions taken by the former President's Justice Department. Many have expressed concerns about that. For example, the Trump DOJ removed from the State Court and the Federal court a defamation charge involving an assault allegation against Donald Trump by a woman.

The release of the OLC memo on obstruction of justice conclusions and so on. How is this coming about? Are these criticisms valid or—what do you say about them?

Attorney General GARLAND. Senator, I am grateful for you asking me the question, and I know about the criticisms. Look, the job

of the Justice Department in making decisions of law is not to back any administration, previous or present. Our job is to represent the American people. And our job in doing so is to ensure adherence to the rule of law, which is the fundamental requirement of a democracy or a republic or a representative democracy. And the essence of the rule of law is what I said when I accepted the nomination for Attorney General, it is that like cases be treated like, that there not be one rule for Democrats and another for Republicans, that there not be one rule for friends and another for foes.

Now, it is not always easy to apply that rule. Sometimes it means that we have to make a decision about the law that we would never have made and that we strongly disagree with as a matter of policy. But in every case, the job of the Justice Department is to make the best judgment it can as to what the law requires.

Now, matters of policy, of course, are completely different, and that explains why we have reversed these policies of the previous administration many times over the last 3 months, and why we have initiated our own policies that are distinctly different from those of the previous administration. But this is an important issue, the distinction between law and policy, and it is at the center of ensuring adherence to the rule of law for which the Justice Department stands.

Senator LEAHY. Well, as you know, and you and I have had discussions on other matters. I think I have been first to say that there may be areas we agree or disagree with you, but follow the law, which is basically what I have said to every Attorney General, Republican or Democratic administrations since I was here. I am worried about another area.

Our right to vote is under assault in dozens of States. You would think you are back in the old Jim Crow era to see some of the bills that come up. And trying to find a path to reintroduce an act, a bipartisan John Lewis Voting Rights Advancement Act. I want to restore the Department's preclearance powers, but that could take time. In the meantime, you now have Kristen Clarke at the helm of the Civil Rights Division. What is the Justice Department doing today to combat voter suppression schemes across the country?

Attorney General GARLAND. Well, as I said, with respect to our budget request, we are asking for a considerable expansion in the number of—in the amount of money for the civil rights division and which will allow us to hire more attorneys. But on the specific question we are reviewing, as you would expect, allegations that come in with respect to voting. Voting is a fundamental element of our democracy.

In fact, without it, without the right to vote, none of the other rights follow. And it was the founding purpose of the Justice Department during Reconstruction to ensure the right to vote of newly freed African-Americans who were under militant attack to prevent them from voting. And the Voting Rights Act in the 60s reaffirmed that concern and that is very much present on our mind now.

Senator LEAHY. Thank you. And I think you expect that Senator Shaheen, and I will continue to work with you on the Crime Victims Fund. You should also feel free if things come up in there, do

not appear that the funds are coming the way you thought, let the two of us know.

Attorney General GARLAND. We will. Thank you.

Senator LEAHY. Thank you.

Senator SHAHEEN. Thank you, Senator Leahy. Senator Capito.

Senator CAPITO. Thank you, Madam Chair. Thank you, Mr. Attorney General, for being with us today. I am the Ranking Member on the Senate Appropriations Committee for Homeland Security, and I followed closely CISA's work to respond to and mitigate cyber breaches and the ransomware attacks.

FBI Director Wray recently compares current ransomware threat to the threats of 9/11. And there is some debate from both Congress and the White House as to whether or not to ban outright—to ban private companies from paying ransom when they become victims of cyber-attacks. As you know, this is an issue that we not just face here in the United States, but globally.

So I asked the same question yesterday, wondering from the Secretary of State, and I would like to hear your perspective. Are you working with our allies diplomatically to try in, you know, in your—as chief law enforcement officer in other countries to try to figure out how we may stop this, be prevented from happening again, and where you see this going in the next near future?

Attorney General GARLAND. I will start with the bottom question, which is not a happy answer, which is this is getting worse and worse, and we have to do everything we possibly can here. This is a very, very serious threat. You know, we saw what can happen with respect to a pipeline, with respect to a food processing company. You can imagine what could happen if we had multiple attacks at the same time on more—even more fundamental infrastructure.

So I am very worried about it. And so is the administration. And that is why we have asked for such a large increase in our cyber budget. That is also why the administration has stood up a full process on this question in the National Security Council. And that is why the Justice Department has put up its own cyber security task force and particularly focusing on ransomware. And as you acknowledge, we have already had one pretty significant success. One significant success is not really going to be enough.

This has to be a constant, you know, just the constant focus. And in each future year, it is going to be require more money. I think we have the right amount of money now, but fair warning, we are going to be coming back for more money after this. And the other question, specific question you asked about diplomatic, yes. So one advantage or one advantage of a sad situation of the pandemic is that I am able to meet with Attorneys General and home secretaries without having to travel to many different countries. And in my first few weeks, that is what I did. And I met with our four closest allies, and I also met with the E.U., each of the EU members. And I also communicated by telephone separately with a number of our allies on this question among others. So this is top of mind, I assure you.

Senator CAPITO. Well, we certainly want to be extremely supportive of you and your efforts of Homeland Security as well and the Department of State, because I think what you have told us is

what we all feel, that we are very, very concerned about this. I am going to switch topics here. Since the passage of the Fix NICS Act, which I was a proud co-sponsor of, we have seen continuous increases in the number of background checks run through the NICS system. In fact, this year we have seen record breaking numbers of checks run with some months reaching over 4 million.

Those background checks were done, and Senator Manchin and I, in our home State of West Virginia. We are very proud of the effort that we are doing there and the way we are contributing. What steps will your Department take to support the NICS system and ensure that we are enforcing background check laws that are already on the books? And what are the funding needs—from time to time, we have really up the funding. Here is that—I looked through your things to see if there was something about that in your budget request. And I would invite you to visit the facility in West Virginia. It is quite something to see.

Attorney General GARLAND. Just trying to get the number for the NICS system. So first of all, you are absolutely right, this is essential to the fight against violent crime and against gun violence. We have to keep guns away from people who are legally not permitted to have guns, which is the purpose of this system. And also, of course, it helps us to, when a bad event occurs, find if somebody has violated the law in obtaining a gun.

So included in the anti-gun violence programs are State and local grants of $421 million, including NICS, which is an increase in 62 percent. So your concern about this is the same as our concern. Couldn't be more in line.

Senator CAPITO. Great. Thank you so much. Thank you, Madam Chair.

Senator SHAHEEN. Thank you, Senator Capito. Senator Manchin. We are going to West Virginia, all at the same time here.

Senator MANCHIN. All the way. Thank you. Thank you, Madam Chairman. And thank you, Attorney General, for your service. Intelligence reports prior to January 6 warned Capitol Police that supporters of President Trump were actively promoting violence and targeting Congress itself. The Department of Homeland Security specifically notifying Capitol Police that they had identified a map of the Capitol Tunnel system and online messages between stopped Stop The Steal supporters and the FBI field office. And Norfolk also warned the Capitol Police.

But however, the Capitol Police Inspector General also found a lack of consensus among key officials about whether these reports indicate a specific known threats. As you both know, it is impossible to prepare to respond unless—without much reliable information as possible. So my question would be, in your position so far, do you feel both your Departments have been sufficiently receiving and relaying threat information with each of the other Federal Departments?

We seem to have a disconnect and sometimes that is very costly, as we have seen. And then a follow up would be, how do we increase the coordination within the Federal Government to respond more quickly?

Attorney General GARLAND. Well, I can imagine, since I think I was nominated on January 7, that January 6 is very sharply en-

graved on my mind. I think the Department of Homeland Security and the Department of Justice, which are the two principal Departments for this purpose, are very well lashed up now. We have joint task forces along this whole area, and the National Security Council has engaged both of us in the involvement in the assessment of the domestic violent extremist threat. So, you know, there will always be problems, but I am reasonably confident that we won't have a problem like that again.

Now, with respect to the Capitol Police and our relationship with them, to be honest, I am not—I don't know enough to know about that. This has certainly raised that issue. And I will go back again and speak with the FBI Director on exactly how that has been done. But I think there is no excuse at this point for that kind of clear connection not to be made.

Senator MANCHIN. Do you know how many people have been arrested to date?

Attorney General GARLAND. Do I know how many you have?

Senator MANCHIN. Do you have a figure on that?

Attorney General GARLAND. Like off the top of my head, within some margin of error it is about 456, something like that.

Senator MANCHIN. And how—do you——

Attorney General GARLAND. And there will be many. There will be more. I don't want—I was about to say many. I want to say that. You know, we have a very good method of finding the additional people who are inside the Capitol, and I would call it crowdsourcing, thanks to the omnipresent videos that everybody took. And even private citizens have posted.

Senator MANCHIN. How many prosecutions we had so far?

Attorney General GARLAND. We have charged 400.

Senator MANCHIN. Has anyone been sentenced?

Attorney General GARLAND. I don't think anybody has been sentenced. I think there has been one or two pleas so far and the other ones are all pending.

Senator MANCHIN. On March 29, 2020, coronavirus aid, relief, and economic security, or the CARES Act was signed into law and provided $2 trillion economic relief to help Americans cope with the economic impact. Among other things, the CARES Act originally authorized up to $349 billion in forgivable loans to small businesses for job retention and certain other expenses to PPP payroll protection program.

While the loans help millions of struggling businesses stay afloat during the pandemic, it also provide a unique opportunity for creative fraudsters to take advantage of Federal Government's generous terms. So I would go down quickly to say I think you know where I am going with this. And if you can explain to me how we are doing on that, because I have—some of the numbers I have seen has been unbelievable.

That $250 million in taxpayer subsidized loans, funds to give to potentially ineligible recipients, then we had, according to a report there were $1.9 million in pending SBA transactions made to accounts outside the United States, another 3,000 suspicious transactions were $73 million that were flagged by financial institutions. Can you give me an update of where we are on that?

Attorney General GARLAND. Yes. So this is a circumstance that I saw even coming in, even before the reports. Seemed obvious that, you know, my last go around in the Justice Department had to do with health care fraud being one of the top issues. And we stood up a task force which was very good at integrating information from all the relevant inspectors general and from the agencies together with our law enforcement and our prosecutors. At that time, we didn't have big data to make these evaluations. Now we do.

And so we have stood up and I have issued a memorandum on standing up a COVID fraud task force, which has been stood up. It involves all of the relevant inspector generals from the different agencies cooperating with each other. It involves all of our relevant law enforcement agencies on both the Federal side components, on both the Federal side and the civil side, and our U.S. attorneys offices. And in our request, there is a $41.3 million request for new funding for the U.S. Attorney's Office for the Criminal Division and for the Civil Division, for specifically for COVID fraud.

So I would say, maybe this is a bad metaphor, but this is a target rich environment. There is a lot of that fraud that happened in the past that we are going to go after. You have already probably seen our reports of major takedowns with respect. And we are hoping that this will be a deterrent of future fraud.

Senator MANCHIN. The money—let me just finish up real quick. The money that you all received, retracked back for the United States, does that go to the Treasury or does it go back into circulation so we can get it to the people who need it the most?

Attorney General GARLAND. That is—my question is, I guess following up with Senator Shaheen's question is does that go really into the Crime Victims Fund, might be a good way to ask that question. Do you we have the answer?

Senator MANCHIN. Can you maybe—that is okay if you don't have it.

Attorney General GARLAND. We will look into that. But the bottom line is, before it even goes into that fund, the first thing is restitution, and restitution to the specific companies or individuals who were defrauded as a private fraud. Yes.

Senator MANCHIN. Right. Okay. Thank you, sir.

Senator SHAHEEN. Thank you, Senator Manchin. And Mr. Attorney General, we are having a little trouble hearing you. Maybe you can pull the mic closer. You have to really speak directly into the mic.

Attorney General GARLAND. Oh, I am sorry. Do you want me to start all over?

Senator SHAHEEN. Maybe not. Alright. Thank you, Senator Collins.

Senator COLLINS. Thank you, Madam Chairman. Welcome, Mr. Attorney General. The website Pro Publica has indicated that it has, "obtained a vast trove of IRS data on the tax returns of thousands of the Nation's wealthiest people." The publication is not disclosing how it obtained the data. So we don't know whether the source for these materials was outside of the Federal Government or within the Federal Government. But we can be certain of one thing.

These highly confidential personal documents were obtained illegally. Any taxpayers should be guaranteed that their privacy will be protected when they provide information and file their returns with the IRS. As we saw during Watergate, there is an incredible danger to private citizens and the credibility of the Federal Government if information is used for political or other purposes. Anything short of the highest degree of privacy protection for taxpayers' information could cause them to be far less willing to provide the information that is required by the IRS for full compliance.

Does the Department of Justice have any information about the origin of this breach and what steps is the Department taking to investigate, identify, and apprehend those responsible?

Attorney General GARLAND. Senator, I take this as seriously as you do. I very well remember what President Nixon did in the Watergate period, the creation of enemies lists and the punishment of people through reviewing their tax returns. This is an extremely serious matter. People are entitled, obviously, to the greatest privacy with respect to their tax returns. To be honest, I know nothing more than about this than what I read in the Pro Publica piece, which I also read and was astonished.

Now, what I did read in that piece was that the Director of the IRS is on it. And he said that their inspectors were working on it. And I am sure that that means it will be referred to the Justice Department. And when I—this was on my list of things to raise after I finished preparing for this hearing, and I promise you will be at the top of my list.

Senator COLLINS. Thank you. I am glad to hear that. The second issue that I want to raise with you are reports that I am hearing from police departments all over the country that they are having great difficulties in retaining and recruiting police officers. And in every single case where I have talked to police officers and police chiefs, they say that it is due to the fact that there has been this vilification of law enforcement rather than trying to strengthen and improve practices of police departments and that the ill-conceived defund the police movement has also led to significant problems. And this isn't just in our largest cities.

We are seeing difficulties with recruitment and retention in rural Maine. For example, Van Buren, Maine, a small community in Northern Maine, has completely disbanded its police department because they can't hire officers. The town of Fort Kent, Maine, which has about 4,000 people and last year responded to 5,000 different calls, can't get enough officers and is considering disbanding its department as well.

And at the same time in large cities, not fortunately in Maine, we are seeing an increase in crime, a substantial increase. Do you personally believe that efforts to vilify rather than improve our police departments, including the defund the police movement, have contributed to these recruitment and retention problems?

Attorney General GARLAND. Senator, no one could look at the Justice Department budget that we put in front of you and think the Justice Department supports defunding the police. We have asked for, with respect to our grant programs, $651 million for the COPS program, which is a $265 million increase. This includes

$537 million specifically for cops hiring, which is a $300 million increase. Likewise for the Byrne JAG grants, we have asked for $513.5 million, which is a $29.5 million increase. So no, as President Biden has made absolutely clear, we are not asking to defund the police.

Now, a lot of what we are doing in addition to supporting hiring, is trying to support trust building between communities and police departments. Not to vilify anyone, but as I said in previous testimony, for police to do their work well and safely, they need to have the trust of the community and the community needs to have trust in the police department that their civil rights will be protected. This includes accountability for police officers who violate constitutional rights, but it does not have anything to do with vilifying whole departments or anything like that.

The Justice Department has a responsibility under the statutes provided by Congress to pursue investigations where we believe constitutional rights have been violated. And we have announced, I think, two of those. And we also have responsibility to do pattern or practice investigations to determine whether there are police departments that have a pattern or practice of unconstitutional behavior. But that is a completely different question than where we are—than you are asking about.

Senator COLLINS. Right.

Attorney General GARLAND. These are two—you can hold both of these in your hands at the same time and not be inconsistent with each other.

Senator COLLINS. But let me be very clear, I was not suggesting that the administration or the President or you were part of this effort. But the fact is it exists. And I know your efforts are to improve policing. And I am a strong supporter of the COPS program. In fact, I worked on it with the President years ago and the Byrne Justice Department grants. But I was trying to get your personal opinion on whether this effort, which you are not a part of, is contributing to the recruitment and the retention problems that are being experienced all over the country.

Attorney General GARLAND. I have to say the answer to that question requires data that I just don't have. Requires all kinds of survey data, and I really don't—anecdotally, I have heard some things like you are saying, but I really don't have any data that I can confidently give you an answer to.

Senator SHAHEEN. Thank you, Senator Collins. Before we go to Senator Reid, Senator Moran has—would like to make a correction for the record.

Senator MORAN. I think—thank you, Chairman. I think in my question to the Attorney General, I indicated the death of Judge Esther Salas rather than the death of her son. And if I did that, I want to make clear that I would like the record to reflect the tragedy that has occurred and have that stated in the factual basis.

Senator SHAHEEN. Thank you very much, Senator. We will make sure that that correction is made. Senator Reed.

Senator REED. Thank you, Madam Chairman, and thank your Attorney General for not only being here, but for your service. Recently, we have observed an alarming increase of incidents on aircraft regulated—commercial aircraft regulated by the FAA. In fact,

2,500 reports this year about 20 times the average number, some of them involving very violent attacks on flight attendants and also indications that TSA agents are also being subject to abuse, to insult, and to worse. Can you discuss what DOJ's involvement may be in these cases? Are you prioritizing what incidents should be taken directly into the Federal attorney for prosecution, or are you allowing them to remain with the FAA?

Attorney General GARLAND. So this is a good question as to which I don't know the complete answer. So assaults on these—I read the same about the assaults on those planes. They are extraordinarily dangerous, even if not intended to bring the plane down. You can imagine the kind of pandemonium on planes that we have seen in some of these videos that people have taken that can cause an incredibly dangerous accident. So we take them extremely seriously. The States have authority over these matters.

To be honest, I am not sure whether it is the State they fly over or the State they land on. There is a conflicts of law question, which I think I may have skipped that course in law school, but there is clearly a State authority here. And I think most of these cases end up that way. But it is also a Federal crime to commit an assault like that on interstate commerce of the kind that we are talking about.

I will go back and look more carefully to see whether TSA or FAA has referred any—what they referred us to here. But these strike me not as things for the FAA. These are not administrative matters, these are criminal matters.

Senator REED. Thank you. You indicated quite accurately that there are major threats of domestic violent extremist, homegrown violent extremists, and international extremists, and they are all using to coordinate social media encrypted transmissions. What tools and authorities and resources do you need to combat these terrorist groups and their use of social media and other forms of encrypted coordination?

Attorney General GARLAND. Well, this also a very also a very hard question. You are very good at asking me very hard questions. The problem is severe because people talking on social media can incite people up to radicalization. This is what we all fear. And we have we have seen this in the in the foreign terrorist circumstance where people are, you know, watching jihadist websites that eventually move them and much more swiftly than ever before from mere involvement and interest to radicalization to action.

We expect that the same is likely to occur with respect to domestic violent extremism, although likely different websites. But maybe not even. And this is a matter of serious concern. So where there is a threat of violence, where we have predication, a reasonable articulation, the bureau can go in and look at what is happening and find out what it can find out. And of course, as this escalates, the bureau has other mechanisms of doing the same. The reason I say it is a hard question as one I am sure you know, it is the First Amendment. And the question is, what do we do in earlier stages of this where there isn't yet violence, there is the kind of talk that maybe could lead to it.

And this is a very hard problem. And I know that the Judiciary Committee and this subcommittee have asked us to think about

what more tools we might need. And we are thinking about that. And certainly our experience on the January 6 investigation will help us make those decisions. But in every case, we have to worry about the First Amendment issue on the other side and not making it difficult for people to say things, even hateful things, because even that kind of speech is protected.

Senator REED. Just as a suggestion. You don't have to comment on this. There might be an opportunity for Information Literacy Commission that could design programs where people become more aware of the disinformation rather than what they believe is true information. And that could be an effective way to counter some of these problems. But thank you very much, Jim.

Attorney General GARLAND. I appreciate the suggestion.

Senator SHAHEEN. Thank you, Senator Reed. Senator Boozman.

Senator BOOZMAN. Thank you, Madam Chair. And thank you so much for being here. We do appreciate your work. I am like Senator Moran, I have got to run in a second and go to Veterans Affairs. But I did want to follow up on Senator Collins question in regard to the seriousness of the breach of the IRS. And we have had other breaches there in the past. You know, it could have been somebody there. It could have been a hack. We don't know what has happened at all. They are talking about significantly lowering the reporting threshold, $10,000, significantly lower than that.

Based on the fact that we have had problems in the past regarding hacking, other issues, and then two, the pipeline issue, the packing plant issue. Does it seem like a good idea to centralize that much information in an agency? Right now if you have an interest or the IRS has an interest, they can contact the local bank.

But to pour through so much data and then be responsible for that data and be able to secure that, that is a huge job for the Federal Government and one that we don't do a very good job of. So could you comment on that?

Attorney General GARLAND. Yes. Just particularly to respond on the suspicious transaction reports, I believe, and I will come back if I am wrong about this, I think we have a recent prosecution of somebody who leaked the information with respect to that matter. So it gives you an idea of how seriously we take this. On the bigger question, look this is the conundrum that the digital age has brought us to. We can distribute information and keep it on paper.

And that is the perfect solution to hacking, if there is never a connection to the Internet. But it also means we can't use the information in a way that is useful for tracking terrorist behavior, for tracking child exploitation, for tracking espionage, for tracking bribery. And that is why we have the special transaction reports, so that it makes it easier for us, maybe even possible for us to do that.

And I know that, I think I saw that the Treasury Department is suggesting something like that for cryptocurrency, which may also be essential as an ability to continue this particular instance we saw with the ransomware circumstance that is the way in which it is being paid.

So, you know, my view would be we need to strengthen our cyber security, maybe keep systems separate. But the idea of distributing them in a way that we can't access them in some central way, that

means it would be very difficult for us to make the kind of use that you want to, you know, to put to this very important information. So it is—the subcommittee here is filled with hard questions. This is a really hard question, and it puts two different principles which are dear to us in conflict sometimes.

Senator BOOZMAN. Right. Well, thank you very much. Thank you, Madam Chair.

Senator SHAHEEN. Thank you, Senator Boozman. Senator Feinstein.

Senator FEINSTEIN. Thank you, Madam Chairman. I am very interested in hate crimes and there has been a very sharp increase in violence committed against Asian-Americans since the pandemic began. One database included over 2,800 reports of anti-Asian discrimination in the last 9 months of 2020.

And the Center for the Study of Hate and Extremism at California State University, San Bernardino found that Asian hate crimes increased by approximately 150 percent last year. So the question is, what is the Department doing to address these hate crimes against Asian-Americans and how can we help support your efforts?

Attorney General GARLAND. Well, I appreciate the question. One of the very first acts I took after becoming Attorney General—I am sorry, after becoming Attorney General was to ask for a 30 day review of this problem with respect to Asian-Americans and Pacific Islanders. And that that report has come back to me. And we have announced the establishment of a hate crime task force. As that report was coming back, the Congress passed the Hate Crimes Act, the two Hate Crimes Act, which were combined, which had a number of requests for the Department to do. We have accomplished all of the things that Congress asked us to do. And we put out an announcement.

We have established a hate crimes coordinator in the Associate Attorney General's office, Deputy Associate Attorney General whose job will be to coordinate civil and criminal side law enforcement in this area, because most of the hate crime law enforcement comes from the Civil Rights Division, which is on under the supervision of the associate Attorney General. We have established in the civil rights division the chief of the criminal civil rights section, as the, I would say, expediters the best word.

This was a requirement of the Hate Crimes Act to make sure that the U.S. Attorney's Offices and the Department as a whole are expediting our response to hate crimes. We are establishing—we have established a language service in the Department because this is obviously a very important part of that. And we have in this particular, in this request for hate crimes response training grants, at $9 million, which is an increase of $4 million over fiscal year 2022. So we take this very seriously. And you are absolutely right. There is a serious increase in hate crimes across the board.

Senator FEINSTEIN. Good. As you probably know, the Center for the Study of Hate and Extremist at California State University, San Bernardino, found that Asian hate crimes have increased by 150 in this country. And I believe we can't tolerate this. So whatever we can do to be helpful to you, I would be most happy to participate in. Let me move to the next question.

Justice introduced model legislation for extreme risk laws. The model is very similar to legislation that I have introduced, which is called the Extreme Risk Protection Order Act, which would give grants to States to help them create and implement extreme risk laws. I think these are really important tools that empower family members and law enforcement to ask courts to keep guns out of the hands of dangerous people found to be dangerous. We have 19 States and the District of Columbia that have extreme risk laws now on the books.

Can you explain why the Department, I agree with this, believes extreme risk laws can help reduce gun violence? And what would you tell us today about the need to pass legislation on this issue?

Attorney General GARLAND. Right. So this—actually we just did this. What you are referring to, I think, was just maybe 2 days ago or 3 days ago, I signed a memorandum in connection with the other rulemaking with respect to stabilizing armed braces at the beginning of this week. These are model extreme risk laws the States can adopt. We have in this budget $40 million of grants which can be used by States for this purpose. The idea is, as you eloquently put it, is to make sure that people who are in extreme risk, either to themselves or to their loved ones, have the guns taken away temporarily while the matter is adjudicated.

And if a judge concludes that is a risk, to keep the gun away for some specific amount of time specified in the State statutes. There are—you know, as we sadly know, gun deaths can occur when people and extremists—mental issues for themselves or personal crises put the gun on themselves or put the gun on somebody else. And we want to alleviate that cause of a terrible tragedy by both protecting the gun owners' due process rights but protecting the potential community victims from the risk of death.

Senator FEINSTEIN. Well, thank you very much. I am very concerned about this. I come from a big State, and it is many different people. I have seen a database included over 2,800 reports of anti-Asian discrimination in the last 9 months of 2020. So I would hope that your Department of Justice would be particularly sensitive right now about anti-Asian hate crimes, because I think the increase of 150 percent has been quite dramatic.

Attorney General GARLAND. I quite agree with you and that is why I have spoken to a number of Pacific Islanders and Asian-American groups already.

Senator FEINSTEIN. Good. And if there is anything we can do to be helpful, very—oh, my time is up.

Senator SHAHEEN. Yes. Thank you very much, Senator Feinstein. We will take Senator Coons, then we will take a brief break because we think we have a couple of Members on their way back. Senator Coons.

Senator COONS. Great. Thank you, Chairwoman Shaheen. Thank you, Attorney General Garland, for joining us again and for your regular engagement with the Senate. In Delaware, the New Castle County Police Department and the Christiana Care Health System have jointly stood up a behavioral health unit that pairs mental health professionals with local law enforcement to respond to individuals going through a mental health crisis. And I have heard from elected officials, community advocates, and law enforcement

leaders across the country, they would welcome these kind of correspondent models that allow for a more appropriately trained and equipped response to individuals going through mental health crises.

Can you speak to the value of these models, the impact they have in benefitting communities and improving police community relations, and what sorts of investments you see making in providing better access to these kinds of models going forward?

Attorney General GARLAND. You are exactly right. You know, sometimes we have crises that arise because the wrong people are responding. Police officers often are not equipped in terms of their experience and even their equipment to deal with a person who is having a problem—it is really not a criminal or violence problem, but a question of instability.

And these can get out of hand. And police officers would like to have the assistance of mental health professionals in the co-responder circumstance that you are talking about, and this is better for the community and in the end, for the person in crisis. So we couldn't agree more.

Our funding includes requests for grants, $40 million, which is $5 million increase for mental health collaborations, and $10 million, which is a $2.5 million increase for training to improve police based responses to people with mental illness.

Senator COONS. So do you think that is a sufficient investment given the scope of the need? Has there been a thorough assessment of how many different communities and how many different public health serving agencies and law enforcement agencies might benefit from this kind of model?

Attorney General GARLAND. So I think this, like, you know, many others of these kind of innovative interventions are works in progress and we have to evaluate them to see how they work. We want an evidence based approach that does work. And so this is, I think, a sufficient amount for us to get seriously involved in this, and then next year maybe I will come back and ask for more money.

Senator COONS. My hometown of Wilmington, Delaware, and many other cities, both large and small across the country, has seen a significant rise in violent crime in recent years. I note the proposal of $100 million for a new community violence intervention initiative. We have a group violence intervention program to try and interrupt violence before it accelerates in Wilmington. I am wondering if you can describe in any more detail how you intend to implement this program and what sort of coordination it might include with other Federal agencies.

Attorney General GARLAND. So this is a new program, and it has several possible approaches. I think that the Office of Justice Programs will have to figure out exactly what the best way, what kind of incentives to give and what kind of programs to give grants to. It is everything from proven violence interrupters, people who have been out on the street trying to get gangs to conciliate, to put down their guns, to hospital based intervention, where the interrupters go to visit somebody who has been shot and is in the hospital and try to conciliate and persuade them not to take vengeance and persuade their relatives not to take vengeance.

So there are a series of these different methods of interruption, and many have been very successful. So, you know, as with all of our programs, we are going to try and give grants to those that have been shown successful and then to use those as examples to hold out for others to fulfill, and when they meet those requirements, they get the grants as well.

Senator COONS. Thank you. I look forward to following up with you and with the Office of Justice Programs around these initiatives, as well as initiatives to expand access to body worn cameras in State and local law enforcement. I was encouraged to see the announcement you would mandate Federal law enforcement to wear body worn cameras. And I was encouraged to see a significant increase in the request for the Victims of Child Abuse Act programing and a new task force to combat trafficking and corruption in the Northern Triangle and Mexico. And look forward to working with you on all these different aspects of your budget proposal.

Attorney General GARLAND. Thank you. We appreciate that. Thank you.

Senator SHAHEEN. Thank you, Senator Coons. As I announced, we will have a 10 minute break. But if I could just ask, Senator Murkowski has requested a clarification on an earlier question before we break because she is not able to stay. So, Senator Murkowski.

Senator MURKOWSKI. Madam Chairman, thank you. And, Mr. Attorney General, thank you for the work that you are doing and your responses today. When Senator Shaheen had led her questioning with regards to the VOCA funds and a concern that we are seeing additional demand on those funds, certainly in Alaska we are. The increase to calls to the sexual assault hotlines have increased by 52 percent since the beginning of the pandemic. Shelters are experiencing overwhelming amounts of strain.

And that 30 some odd organizations that we have in our State are facing this 35 percent cut to their VOCA funds, which is absolutely frightening everybody. But, as we look at the President's budget with a $2.65 billion cap for the funds, in 2019, fiscal year 2019, Congress put the VOCA cap at $3.5 billion. We have talked—we understand the structural issues relating to the deposit fund. We are going to—we are trying to address this through legislation.

That is absolutely what has to happen. But in any case, what we have is this decreasing cap is going to impact the effect on the ground for victim services, if not for this year then absolutely for next year. So you have said to the chairman that there was $400 million surplus that you anticipate at the end of the year. The way I understand——

Attorney General GARLAND. At the end of 2022.

Senator MURKOWSKI. At the end of 2022. Excuse me. Yes. At the end of 2022. But if I understand what we have coming into the fund versus the outlays, that will result in decreases, if again, not necessarily this year, next year, the next fiscal year. So I just want to make sure that we are not operating under the assumption that, in fact, we are going to be okay in this next fiscal year. Because right now, I think all the victim services in my State, and I think Senator Shaheen in yours are just desperately afraid of these cuts that are coming.

And so I want to understand whether or not we are—whether there is any flexibility with additional funding that could be used to supplement so we don't have this hit again at a really difficult time for so many that are providing these important and vital services to victims of domestic violence, sexual assault, and the like.

Attorney General GARLAND. I completely agree that the bigger this fund, the better, because there is in many ways an unending demand and appropriately so. Just to clarify what I said about the money, as of April, we have collected sufficient receipts to cover all the way through fiscal year 2022, fiscal year 2021 and 2022. We expect to end this fiscal year with $3 billion, which will cover the $2.6 billion request. That is where my $400 million net at the end of that time comes from. Obviously, we would like to have a higher amount at the end, but the way we are now, that would require taking less money out of the fund, which is the opposite of what you want.

Senator MURKOWSKI. Right, that is not where we want to go. Yes.

Attorney General GARLAND. Right. So I think that I am not an expert budgeteer, but it seems to me that what we need is to be able to put more money into this fund, which means expanding, the maybe in expanding the kind of crimes that flow into it, but also you know the prosecutors in the Justice Department need to take more attention to getting restitution that goes into this fund and not to be satisfied with other kinds of, you know, pleas, for example. So I don't know—it is hard to say that as an across the board question, but that is the best I can do at this point.

Senator MURKOWSKI. I think we are all trying to get to the same place, which is we don't want to see these significant cuts to our victims services. We have got to address legislatively, I think the construct of the VOCA funds. We will work on that but——

Attorney General GARLAND. Let me ask my team to work with you.

Senator MURKOWSKI. I would appreciate that. Thank you.

Attorney General GARLAND. I think this is very important.

Senator MURKOWSKI. Thank you very much. I appreciate your attention. And thank you for letting me jump in before the break.

Senator SHAHEEN. Thank you. Senator Murkowski. As we promised, the witness will now take a 10 minute break.

Attorney General GARLAND. Thank you.

Senator SHAHEEN. I will now call the CJS hearing back to order, and call on Senator Graham.

Senator GRAHAM. Thank you very much, Madam Chairman. Can you hear me?

Attorney General GARLAND. I can. Thank you.

Senator GRAHAM. Welcome, Mr. General. I think Senator Coons was mentioning some ideas about having some resources outside of traditional policing to deal with mental health issues. Didn't you all have a discussion about that, I think?

Attorney General GARLAND. We did.

Senator GRAHAM. Count me in. I would like to help in that regard. So last year, the Senate Judiciary Committee, I was the Chairman, reported a bill out of the Committee, 13 to 9, that waived sovereign immunity, allowing Americans to sue China in

Federal court. You have to prove causation and all the normal rules have to be followed for damage done by the coronavirus. Do you support that idea?

Attorney General GARLAND. I have to say, I am not familiar with the bill, I am sorry.

Senator GRAHAM. I am going to send it to you. I would urge you to get back with me sooner rather than later. Do you agree with me if, in fact, this was a lab leak, the source of the virus came out of a Chinese lab because of negligence, China should pay somebody?

Attorney General GARLAND. I really don't—I don't know enough about this. I know that the Government is beginning to evaluate that—reevaluate that——

Senator GRAHAM. I am just giving you a hypothetical. If the Chinese government, lied about the origins of the coronavirus and it, in fact, came from a lab leak in Wuhan, which they denied, do you agree that they should be held accountable and compensate the world in some fashion for the damage they have done?

Attorney General GARLAND. I think this is a diplomatic issue and an issue for the State Department and the Executive branch. I don't think——

Senator GRAHAM. But you don't see a legal——

Attorney General GARLAND. The way you put it, which you asked whether they should compensate the world in some manner, I think that doesn't fit in my——

Senator GRAHAM. Okay. That can be diplomatic, but we allowed victims of 9/11 to sue Saudi Arabia and other countries for their part, any part they may have played in 9/11. Do you think that model should be allowed for China?

Attorney General GARLAND. Again, I think this is a policy question for the diplomats. I am just a poor lawyer.

Senator GRAHAM. Okay, alright. So I do believe there is a crime wave in the United States regarding violent crime.

Attorney General GARLAND. I think there is a serious, significant rise in major violent crime beginning last year. Yes, I do.

Senator GRAHAM. Thank you. That shortened up these questions. You are dead right. Atlanta is 59 percent increase in homicides, Chicago, 56, Houston, 42, Portland, 800 percent, L.A. County, 127 percent—Atlanta, 63 percent. The numbers are pretty staggering. What do you think has caused that?

Attorney General GARLAND. I know better, having lived through several crime waves, as both of us have, and both of us know that figuring out exactly what has caused a particularly a——

Senator GRAHAM. Is it possible that some of the rhetoric about defunding the police and actually reducing police capability has created some of the problems?

Attorney General GARLAND. Just don't know. There are a lot of factors here, of course, the biggest one being the pandemic and I just don't know at this point how to——

Senator GRAHAM. So you think the pandemics is more of a root cause than declaring war on the police?

Attorney General GARLAND. No, sir, I don't know. I honestly don't know.

Senator GRAHAM. Do you think that is a possibility that we have gone too far in reducing police capability? Is that a possibility?

Attorney General GARLAND. I think I gave the answer to Senator Collins, and I give the same one, which I think it is, this Justice Department, this administration does not believe in defunding the police. We believe in supporting the police. We also believe that community policing is very important. And developing trust between the community and the police Department is essential to stop violent crime. And we also think that includes holding police accountable who violate——

Senator GRAHAM. I agree with all that.

Attorney General GARLAND. I know you do.

Senator GRAHAM. I do want to work with you on police reform. But I guess, it is pretty obvious to me that there has been a push back to this defunding the police. It hasn't worked. That the effort to marginalize police forces has gone too far. And I think we are seeing the results of that. And if we don't change our rhetoric, in some parts of the country it is going to get worse. Let's talk a little bit about immigration. In the end of 2020, we had an historic 45 year low of illegal crossings into this country. Now we have historic highs of illegal crossings in this country. What do you think has happened in the last 6 months?

Attorney General GARLAND. Well, once again, you are asking me a question I am no expert on. But there was a pandemic, and that makes a difference in this area. I am not willing to ascribe the difference to the pandemic, and I don't know the answer. There are a lot of factors going on here.

Senator GRAHAM. How many asylum claim backlogs do we have?

Attorney General GARLAND. We have 1.5 million backlogs in the immigration courts as of the day I took office.

Senator GRAHAM. Would you agree with me that the asylum system in this country is completely broken?

Attorney General GARLAND. I would agree that the immigration system as a whole is broken.

Senator GRAHAM. I am talking about asylum in general.

Attorney General GARLAND. I don't know. We are evaluating how we deal with asylum now.

Senator GRAHAM. Well, how can you have a system where you have 1.5 million backlog in cases—you now have a catch and release program regarding asylum. It seems to me that it is beyond broken. Do you agree that we should revisit our asylum policies?

Attorney General GARLAND. I think we need to get the backlog down. The backlog is from the preceding years, not from the new administration. I totally agree we need to get the backlog down. We need to streamline our processes.

Senator GRAHAM. And I don't mean to belabor the point, but the backlog is not the only problem. You are going to have a million and a half more if you don't change catch and release. Thank you very much.

Senator SHAHEEN. Thank you, Senator Graham. I have—I would like to do a second round, and I know Senator Moran is interested in that as well. It has recently been disclosed that the previous administration's Justice Department seized phone records of reporters

with The New York Times and The Washington Post, and the phone and email logs for a CNN reporter.

This is particularly salient for me, having just returned from Ukraine and Georgia, where I met with reporters from Radio Free Europe and Radio Liberty who talked about the challenges they are facing in Belarus and Russia because of efforts to threaten reporters so that they won't do their jobs and actually provide information to the public. So I understand that the Department is no longer going to cease journalist's records when conducting leak investigations.

And I would just ask, do you commit to ensuring freedom of the press and can you tell us what policies are in place or you expect to be in place to ensure that there are no additional efforts to seize phone and email records of journalists unless they are involved in legitimate criminal concern?

Attorney General GARLAND. So this is a very important issue. The President has made clear his view about the First Amendment, and it coincides with mine. It is vital to the functioning of our democracy and that extends to the need for journalists to be able to go about their work disclosing wrongdoing in the Government. That is part of how you get faith in a democracy, is by having that level of transparency. What you were talking about, these were decisions that were made under a set of policies that have lasted.

I don't—I am not casting blame when I want to be clear, as these were under a set of policies that have existed for decades that continuously with each new administration, ratcheted up greater protections. But going forward, we have adopted a policy which is the most protective of journalist's ability to do their jobs in history. And it is, as you describe, that we will not use compulsory process in leak investigations to require reporters to provide information about their sources when they are doing their job as reporters. That is going to be our policy. I am meeting with people within the Department.

It has been reported that I will be meeting with people outside the Department, so I will leave that aside for right now, in order to figure out—but that is the basic policy that will be issued in some kind of memorandum, obviously, from me. You have a good point, which is in developing this policy, we have to distinguish between reporters doing their jobs and reporters committing crimes unrelated to the leaking—unrelated to the leaking. So there are some definitional questions, but I think they are quite resolvable and that is going to be our task over the next few weeks.

Senator SHAHEEN. Well, thank you very much. I want to follow up on Senator Graham's questions about the backlog in our immigration courts. And I have a question first, which is more a clarification, because I was surprised there wasn't a budget request for the Legal Orientation Program. As you know, this is a program that provides basic legal information and explanations of court proceedings to those who are going through immigration courts. Can you tell me if the Department plans to continue this program and what the funding level will be?

Attorney General GARLAND. Yes. Included in our request for the Executive Office of Immigration Review, $22.5 million would con-

tinue to support that Office's legal orientation program, which LOPS which thinks is what you are referring to. And in addition, we have requested $15 million—there will be $15 million for a new pilot to provide access to legal representation for immigrant children. So you have our commitment that we are going to be continuing this process up to the—obviously up to the amount of money that is provided by the Congress.

Senator SHAHEEN. Well, thank you very much. Having worked with Senator Moran several years ago when there was an effort within the Department of Justice to eliminate that program, I think it is very important that it continue. Given that the immigration courts are not independent, like the Federal court system, there are a lot of organizations like the Federal Bar Association who have argued that they should become Article 1 courts. Do you support leaving them the way they are or would you advocate to make them a separate system?

Attorney General GARLAND. This is an issue that I haven't thought about, with respect to the sort of the way in which to structure this. I do think that the court should be as independent as possible. I understand that was the reason in All Land Security Act that they were taken away from INS, Immigration and Naturalization Service, which went to Homeland Security, and the courts were left with the Justice Department.

At one point they were all together at the Justice Department. And that was an effort for security—for independence. And I believe that immigration judges should be left alone to do their work. And they are, of course, subject to review. The question of whether they should be Article 1 courts and completely independent is really a question for the Congress. I would be happy to think more about this, but obviously that would create even more independence. And so I just leave it at that. It is an issue of congressional policy.

Senator SHAHEEN. Well, as you and Senator Graham in your back and forth, it is very clear that we have a backlog in our immigration courts. And even though Congress has provided more money in the last few years, at least since I have been on the Senate Appropriations Committee, we still have seen that backlog grow, not diminish. So I am not sure what the answer is, but I do wonder if we need a fundamentally different approach. We also need immigration reform, as you pointed out. So thank you very much. Senator Moran.

Attorney General GARLAND. As long as we are making corrections, I have been advised that I kept saying at 1.5 million person—case backlog is actually 1.3 million.

Senator SHAHEEN. Yes, that is the number I have too. Thank you for that clarification. Senator Moran.

Senator MORAN. Attorney General, you are very good at making me feel comfortable having——

Attorney General GARLAND. Well, I will give you another correction. I think as soon as I said Hamilton, I think it was probably Madison, but I will check the Federalist paper that I was thinking about and get back to you on that.

Senator MORAN. That is okay. Nobody is going to know the answer to that.

Attorney General GARLAND. Unfortunately, I feel bad about this. I should know the answer to that.

Senator MORAN. General, just a couple more questions, and I think Senator Shaheen and I will conclude this hearing. I was on the border—this is perhaps a bit of an immigration issue, but more drugs, crime, cartels issue. So I was in McAllen, Texas, not too many weeks ago to see the nature of what is going on at the border, including the detention of juveniles and listening to Border Patrol agents. But I also met with law enforcement officials, Federal law enforcement officials to talk about the aspect of our borders and the necessity of them being secure for purposes of avoiding crime, criminal activity, drug trafficking, narcotics, sexual abuse.

And I just am really concerned about the Mexican cartels. I think they are probably our greatest drug trafficking threat. They continue to supply most of the cocaine, methamphetamines, heroin, fentanyl. I am particularly concerned by the flood of methamphetamines. We have—this Senate spends lots of time on a variety of drugs, and I sometimes think methamphetamines is overlooked as we have moved on to others, other drugs.

But 74 percent of all the drug seizures in Kansas are methamphetamine. And my question is, can you describe the threat that you see posed by Mexican cartels, in particular the cross-border trafficking of drugs? But I also would expand that question to see if you have any comments that can provide any knowledge about the terrorism aspect or the espionage aspect of crossing the border is related to the cartels.

My understanding is the Chinese come to the United States really at every opportunity to steal our secrets, to ingrain themselves into our economy, our science, our universities. Is there knowledge about cartels and relationship with Chinese who come to infiltrate and steal our secrets and work at NASA and SpaceX and universities? Are you aware of that?

Attorney General GARLAND. So I am not aware of, and I don't mean in any way to suggest that it is not true. I just don't have any information. I think this is the kind of thing I will have to get staffed and possibly from the FBI to come back to you. The connection that I do know about is that precursor chemicals coming from China are shipped to Mexico and then made into the narcotics that are then shipped into the United States. So there is that connection and I think that is pretty well known. But the question you are asking, I just don't know the answer.

Senator MORAN. Well, perhaps my question, which was overly wordy, but is really a statement about the need for the Department of Justice, Federal law enforcement in all arenas to increase the efforts at the border, to diminish the role that the cartels, Mexican cartels play in the United States.

Attorney General GARLAND. I think they are extraordinarily dangerous. They have lethal weaponry, sometimes exceeds what the Mexican military has, as we have seen in some of the shootouts in Mexico.

Senator MORAN. Have you had—I can't remember you—I think you talked about visiting with Attorney Generals from other countries

Attorney General GARLAND. With Mexico——

Senator MORAN. Including Mexico.

Attorney General GARLAND. Yes. Yes. And——

Senator MORAN. A sense of cooperation.

Attorney General GARLAND. Yes, I agreed on the need for cooperation. We had a very good talk. Yes.

Senator MORAN. My second, I think final question, Madam Chair, is before your confirmation, you and I spoke just a few days before, we spoke about the need to ensure that small and rural law enforcement agencies have a fair shot at DOJ grants. And in Kansas, a smaller—I just want to highlight this for you. In Kansas, a smaller rural Department may only have a handful, two or three or four sworn officers. They don't have the resources to hire a professional grant writer. They can't simply take one fifth of their force off the beat without putting public safety at risk.

I would continue to believe it is essential that the Department consider ways to ensure that small and rural law enforcement agencies have access to the funding opportunities that the Department of Justice provides. And so, General Garland, I expect you would answer this question yes, but will you commit to making it a priority within the Office of Justice Programs and the COPS office to promote access for small, rural agencies?

Attorney General GARLAND. Yes, and as I told you in our conversation, obvious to me, the problem that you point out. If you have five officers, you don't have anybody who runs the grant making Department or the grant application Department. We also have the same problem with respect to small community organizations that don't have the ability to do funding. And I think some of the funds we have available now for OJP is to make it more easy access to applications online. And it seems to me obvious that we should be able to transfer that kind of ability for police Departments as well, if that is not already in the train. But I will look into it for you.

Senator MORAN. Thank you. I think when we met on that day, I asked you if you would agree to come to Kansas and you said yes. But if I say yes to you, I have to say yes to every other Senator who asked me. So when no one is listening, I am going to ask you again.

Attorney General GARLAND. That is fair. I—the Assistant Attorney General for the Office of—for the Justice Management Division pointed out that the money, I was thinking of $7 million for rural law enforcement for this purpose.

Senator MORAN. Thank you for that. Thank you very much.

Senator SHAHEEN. Thank you, Senator Moran. Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Madam Chairman, Ranking Member Moran. And Mr. Attorney General, great to see you. First of all, I support many of the provisions in your budget and appreciate its overall framework. I especially want to mention the Community Violence Intervention Initiative. I look forward to working with you and the Department as you implement that. As you know, there are some programs that have been more successful than others. And I think you would agree, we want to focus on best practices. And I would like to share with you in the Department some that have been successful in Baltimore, if you would agree to that.

Attorney General GARLAND. Absolutely.

Senator VAN HOLLEN. You have also talked about some funding to help States and local jurisdictions that want to move forward with red flag provisions or gun licensing laws, permit to purchase. Johns Hopkins University has studied this area carefully, especially with respect to permit to purchase requirements. And I hope you will consider putting out a model proposal for local jurisdictions that are interested for a permit to purchase, as I think you are suggesting you are going to do for the red flag laws. Is that something that you would consider doing?

Attorney General GARLAND. Definitely. We did put out the red flag laws just this week or earlier this week, but that is definitely something to consider. And I hadn't thought about it.

Senator VAN HOLLEN. In terms of a model permit purchase—in fact, I have introduced legislation here. We would love to work with you to see if that is something that would be a good model going forward. You have probably seen some of the recent stories regarding accountability in Federal law enforcement officers. And a little over a year ago, I wrote to the FBI regarding implementation of the Use of Force database. The Washington Post reported that in 2019, only 27 percent of law enforcement agencies contributed information through that process, covering about 41 percent of officers. You know, in my discussions with law enforcement, they all agree that more transparency and more accountability is good for everybody.

And I am assuming you agree with that premise. So we did recently see that while we encourage local jurisdictions to provide this information and it is voluntary, that not all Federal law enforcement agencies provide this information. I hope you would agree that we should lead by example. And I would just like to get your commitment here today that all Federal law enforcement agencies that come under your jurisdiction will report this data.

Attorney General GARLAND. I didn't know we weren't reporting. This follows the same problem with respect to body worn cameras when I first got in and learned that we were not wearing them. I asked why not? And I directed our Deputy Attorney General to resolve that issue, and very prompt, and this week we did resolve that issue. So let me put that to her as well. And this will require a meeting of the various law enforcement agencies and we will get on that.

Senator VAN HOLLEN. I appreciate that. And it may not—it may also include Federal law enforcement agencies under the jurisdiction of other Departments. But as the Attorney General, if you could just agree that you will reach out to your other agents——

Attorney General GARLAND. You want to authorize me to demand——

Senator VAN HOLLEN. I would like to deputize you to do that.

Attorney General GARLAND [continuing]: As a statute you can add, that would be great.

Senator VAN HOLLEN. But I do think, you know, I think many of us clearly wrongly assume that since the Federal Government was asking State and local jurisdictions just that, we already were doing it within the Federal Government. So I think it is really important we do. You mentioned the body cameras. Let's make sure

we do it with the data as well. The other thing I do want to mention, we are we are having ongoing discussions between the House and Senate, Democrats and Republicans about the George Foy Justice and Policing Act. But one of the things that I think is we have seen on a bipartisan basis is there are many times when somebody calls 911, one where a law enforcement response is neither justified or appropriate.

In many cases, as you begin to look at 911 calls, involve mental health situations where there is no crime involved, substance use situations. And, you know, I know you have proposed better training for police in terms of behavioral health. That is fine. But a number of us have proposed creating alternative responses to those many, many cases that involve mental health situations and allow law enforcement, therefore, to focus on those situations where, you know, a use of force may be required. Could you work with us to create those alternative response mechanisms?

Attorney General GARLAND. Yes, the answer is yes. I completely agree with you that alternative response mechanisms can decrease the risk of a violent confrontation when none is necessary and lead to death. We do have $40 million in this budget for the purpose of mental health collaborations and another $10 million for training a police based response to people with mental illness. So we have a basis for grants for this kind of program.

Senator VAN HOLLEN. I appreciate that. Congresswoman Karen Bass and I have introduced legislation last Congress and we are going to reintroduce it shortly. So we look forward to working with you on that. Thank you. Thank you.

Senator SHAHEEN. Thank you, Senator Van Hollen. We will go to Senator Braun next. I am sorry, Senator Hagerty, he beat you here.

Senator HAGERTY. I will stay long enough, don't worry.

Senator BRAUN. Thank you, Madam Chair. Mr. Attorney General, over the past 3 months, I think the FBI has done a diligent job in pursuing those that breached the Capitol, including to the extent of, I think, visiting their homes, tracking phone records, and all of that. Curious, we had that incident occur that was horrific to anybody but what has been done in a similar light where you look at Antifa, BLM activists that were, you know, active in so many places across the country this past summer. Has that same diligence and effort been applied there? And I think when you add up the number of individuals involved, it would be a lot. I am just curious to see what your approach is there and what you are thinking is there.

Attorney General GARLAND. I think that is a perfectly fair question. The events that you are talking about all took place long before I was at the Justice Department. So I was not there for the purpose of organizing the response, supervising the response, figuring out how many people should be involved in the response. As far as I understand, in terms of the arrests and the investigations, they are largely completed. And long before I got—before I got here. The January 6 event occurred the day I think before my nomination. And as you can imagine, it is burned on my mind. And I promised that I would focus on that.

And I have and so I can account for my behavior. With respect to the way we organize the January 6 response, I am sure that the Justice Department last summer was equally diligent with respect to the response to the civil unrest. At that time, I am advised that we have spent $48 million in FBI, DOP, Marshals, and ATF during that period, not counting the January 6 expenditure.

Senator BRAUN. In other words, related to the riots and so forth across the country——

Attorney General GARLAND. I am going to describe it as civil unrest because it has a legal connotation, but yes.

Senator BRAUN. And how many arrests were made?

Attorney General GARLAND. I don't know the answer——

Senator BRAUN. If you could get back to our office.

Attorney General GARLAND. Absolutely.

Senator BRAUN. I think many would want to make sure a fair response in both endeavors.

Attorney General GARLAND. Not a problem. Would be happy to get back to you.

Senator BRAUN. I am Ranking Member on the Ledge Branch subcommittee, where we have got to figure out resources that we are going to devote to securing the capital, making sure that Capitol Police are getting the resources they need. On the building itself, we spoke to the Architect of the Capitol that said they were close to $30 million in damages done. That seems like a lot because especially in relation to something that came out of the Justice Department. In an article at The Washington Post, they tabbed it $1.5 million. Are you aware of that?

Attorney General GARLAND. I saw that number. I was also surprised. I don't know what they were calculating that as a basis of. I guess this had something to do with what the restitution for our individuals might be. But I don't know—I don't have any reason to doubt the larger number that that you mentioned.

Senator BRAUN. Those are two very large figures.

Attorney General GARLAND. Yes they are and I will when I get back to the office, see if we can figure out——

Senator BRAUN. I appreciate finding out what your official version is and then we will compare it to that.

Attorney General GARLAND. Very good.

Senator BRAUN. The declassified intelligence report on the domestic violence extremism released by the DNI in March identified abortion related violent extremists as a principal threat. To me, this seemed like kind of a wild attack on the pro-life community, did not list groups like BLM and Antifa who have had a clear recent record of violent acts. So can you explain what that was about, why there would have been focus on that? And has there been a rash of incidents related to it?

Attorney General GARLAND. So I am going to have to refresh my recollection about the report. It wasn't, you know—what the report described as the leading threats were racially motivated, ethnically motivated violent extremists. That was, and particularly white supremacists, that was the number one threat. I think that the anti-abortion is, you know, an area I don't have any, to be honest, I don't know what the, you know, where that fits in a threat matrix as to how high it is at this point. It is not my understanding that

it is one of the ones that was listed at the high end of threat. But we can get back to you on where that——

Senator BRAUN. If you would, please. And I think the point being that if it seems like there is a disproportionate interest or emphasis on one category and not the other, it is going to raise some eyebrows. And then also bring into the question of is that effort being applied fairly across the——

Attorney General GARLAND. Yes. And so in addition to the category of racially or ethnically motivated violent extremists, there is a separate category of anti-Government or anti authority violent extremists. And this would be where some of the anarchists that you were just talking about would fall into that bucket. And that is another—an area of focus of the FBI.

Senator BRAUN. Thank you.

Senator SHAHEEN. Thank you, Senator Braun. Senator Hagerty.

Senator HAGERTY. Chair Shaheen, thank you, and looks like Ranking Member Moran has left, but General Garland, I appreciate your staying for a little bit longer. And thank you for being here to testify today. I would like to follow up on just a bit of your discourse with Senator Moran for a moment. I would like to follow up on something that you discussed with Senator Shaheen. But with respect to Senator Moran and your conversation about working with your counterparts, the Attorneys General in Mexico, I was last month with the foreign minister of Mexico.

I went there to examine the situation on the ground. He was very clear as well that they would like to cooperate with us on law enforcement, sharing technology. They need help interdicting the fentanyl and fentanyl precursors that are coming in from China. They have real problems there. And I applaud any efforts that you might undertake to work with their law enforcement to help them and in particular in border security.

We went through that as well, and I think our technology and our capabilities could be helpful there. I would like to turn to a different subject, though, and that was that gets back to the backlog that you are experiencing and perhaps the need for a new approach. And as Attorney General, your Executive Office for Immigration Review is charged with adjudicating claims for asylum. Human smugglers in Central America and Mexico, known as coyotes, are using our country's generous asylum laws as advertisements to draw people into a very dangerous journey, a journey that often results in them losing their lives or becoming victims of crime.

To this end, a recent Los Angeles Times report states that, "Mexican coyotes deposit migrants at the Rio Grande and instruct them to give themselves up to U.S. Border Patrol agents to claim asylum." This is what the coyotes are marketing, go across the border, claim asylum. That is the secret password to get in, asylum, fear. That seems to be the key to enter our country. General Garland, do you agree that human smugglers are taking advantage of our asylum system?

Attorney General GARLAND. Well, I think there is no doubt that human smugglers and human traffickers are taking advantage of the people who they are smuggling. That is the reason we have just stood up a new task force, anti-human smuggling and anti-human

trafficking. It will involve all the main agencies of we call it Task Force Alpha, which just announced this week, includes cooperation with homeland security. We are also putting people into the Northern Triangle countries where the smuggling originates to try to interdict it there. We are also introducing anti-corruption units to assist those countries in ending the corruption that often leads to people going to these smuggling entities.

Senator HAGERTY. And no doubt the coyotes are taking advantage of the people there. But are they taking advantage of our system, our generous system of asylum?

Attorney General GARLAND. I don't—there are a lot of motivations for people coming out of the Northern Triangle, some of which we can fix and some of which we can't and which we are trying very hard to fix. You know, we have an obligation under our law and under international law to provide refuge under the categories that Congress has set forth for us. And people are entitled to process, to seek asylum under what Congress has authorized and required.

Senator HAGERTY. Well, the problems with our asylum laws that you are acknowledging, I think are clear. I applaud you are acknowledging that because we do need to address that. And I look forward to working to do that. But let's come back to the messaging that the coyotes are using to attract people into this dangerous process. Just this week in Guatemala, Vice President Harris sent a message to those that were perhaps contemplating coming to our country illegally, "do not come." Is that a message that you can deliver, the Attorney General sitting right there, a message to these people, do not come to our country?

Attorney General GARLAND. Look, I think that Vice President Harris has been very deeply involved in the kind of law enforcement and other requirements that we are looking to set up. She was instrumental in moving us to establish part of this joint task force to de-incentivize and to reduce traffic from the Northern Triangle countries down through Mexico and into the United States. So there are a lot of different messaging kind of issues involved. And some of them involve getting at the root causes of why people are leaving in those countries.

Senator HAGERTY. Well, messaging is one of these root causes. And I think it would be incredibly important to hear from our top law enforcement officer in America that these people should not come.

Attorney General GARLAND. I don't want people to make that very difficult and dangerous trip with coyotes that you are talking about. There is no doubt about that. This leads to human tragedy.

Senator HAGERTY. Well, if these people enter our country illegally, are you willing to say that they will be deported?

Attorney General GARLAND. So the question of asylum is one that our law permits them to make claims of asylum and to have an opportunity to show whether they have the grounds for it or not. If they are not entitled to asylum, then they are deported. I want to be clear that element is for the Department of Homeland Security. It is not for the Justice Department. What we do is adjudicate the asylum claim.

Senator HAGERTY. Well, I will come back and say this. According to the data on the Justice Department website, 90 percent plus of the people that come here under the claim of asylum are found to be invalid claims. And in that circumstance, would you be willing to say if a person comes here, goes through the asylum process and it is found that their claim is invalid and they should be removed, that they will be deported?

Attorney General GARLAND. The Department of Homeland Security is responsible for that issue. They have—because of the large numbers that you are talking about, they, I understand, have a series of priorities. First and most important are deportation of people who are at risk for National Security to the United States and for public safety. I think—and lastly, they are trying to deport recent arrivals in order to send the message that you are talking about that people not come.

Senator HAGERTY. So I was with you and Secretary Mayorkas when we went through this prioritization before. I am shocked at what he said, because the number of people coming across our border illegally has massively increased yet the number of deportations has gone way down. So I am not buying that argument.

What I would love to hear you say is our Nation's top law enforcement official in a way that would instruct the Department of Homeland Security is that it is illegal to cross the border into this country. That if somebody is found to have failed in their claim for asylum, which 90 percent of the people do, that they will be deported. That is the message that people in these countries need to hear. Not that "well, don't come," but if you do, there is nothing going to happen to you.

Attorney General GARLAND. It is a misdemeanor to cross the border without the appropriate documentation. That is correct. And the question of rights to apply for asylum is also correct. That is an element of our law. The determination of how to deport and what priorities, that is up to the Department of Homeland Security. And I don't think it useful for me to get into their business with respect to their—any more than I would expect them to get into our business with respect to our law enforcement priority.

Senator HAGERTY. Well, I would hope for a clear determination that when someone is found to be applying for asylum here in an invalid fashion, that they should leave this country and that they will be deported. The fact you are not able to say that clearly today and send that message to the Department of Homeland Security is shocking.

Attorney General GARLAND. If they have been adjudicated to not be entitled to asylum, then they should be deported, yes.

Senator HAGERTY. I appreciate you saying that. I applaud that because that is the message that needs to be conveyed.

Attorney General GARLAND. Right. I am sorry. Maybe I didn't understand the question, but of course, once they have been adjudicated, then, of course, there—they should be deported.

Senator HAGERTY. And I think we need to be very clear about that. Thank you.

Senator SHAHEEN. Thank you, Senator Hagerty.

Senator HAGERTY. Thank you, Chair.

ADDITIONAL COMMITTEE QUESTIONS

Senator SHAHEEN. Your time has expired. If there are any further questions for the record, senators have until June 16 to submit those, and we would request that the Department respond within 30 days. Thank you very much, Attorney General Garland, for appearing today and for your willingness to take all of our questions. Let me also announce that we will stand in recess until Tuesday, June 15, when we will hold a hearing on NASA's budget request.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. MERRICK B. GARLAND

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

Question 1. The Crime Victims Fund is an essential component of our Federal Government's support for victims of crime. This Fund provides compensation and support for victims of crime through grant awards to States, local governments, individuals, and other entities. The Fund is projected to reach a 10-year low by the end of this year. I am a proud original cosponsor of the bipartisan VOCA (Victims of Crime Act) deposits fix legislation, which would help to sustain the Fund. You recently responded to a letter from Senator Shaheen and myself about this issue.

1a. Your budget requests that $2.65 billion be released from the Fund this year, which you estimate will have a balance of only $1.4 billion at the end of fiscal year 2022. What can the Department do now, without congressional action, to help ensure the Fund will exist beyond this fiscal year?

Answer. The Crime Victims Fund has collected $457 million in receipts this year as of June 21, 2021. The Department's Justice Management Division has assessed both that these receipts, when combined with the end of year fund balance, will provide enough funding to pay for the obligation caps for through fiscal year 2022 and that the Fund's balance at the end of fiscal year 2022 will be $1.448 billion to support future programs beyond this fiscal year.

The Justice Department is committed to ensuring that the Department's policies and practices promote victim assistance and compensation. This commitment is reflected in Departmental guidance and policies, including the *Attorney General Guidelines for Victim and Witness Assistance* and key sections of the Justice Manual, including Sections 9–27.230(8) and 9–27.620(4).

1b. Your budget is silent on the issue of expanding the types of deposits going into the Crime Victims Fund. Would you support Congress' effort to enact reforms that would expand the deposits going into the Fund?

Answer. The Justice Department strongly supports efforts to further strengthen the Crime Victims Fund. I would very much like to work with you on this effort and would welcome the opportunity to talk with you about ways that Congress could expand the types of deposits that go into the Fund.

1c. Your budget request estimates nearly $1 billion from fines, penalties and forfeitures will be deposited into the Fund during fiscal year 2022, nearly double the amount that was deposited in fiscal year 2020. How does your Department account for this increase in deposits?

Answer. The President's fiscal year 2022 budget estimates that $1 billion from fines, penalties and forfeitures will be deposited into the Crime Victims Fund during fiscal year 2022 on the basis of an average-based analysis of monthly deposits into the Fund across a 5-year period. The Department's Justice Management Division advises that the amount was then rounded down in order to offer a more conservative projection in light of recent trends in receipts and that the analysis excluded certain outlier months with exceptionally high or low receipt levels.

Question 2. The Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) remains at the forefront of protecting our communities from violent criminals and the illegal use and trafficking of firearms. One critical role the ATF plays in solving

crimes and preventing gun violence is through effective crime gun tracing. The ATF's National Tracing Center is currently home to millions of gun sales records.

2a. How important is it for the ATF to be able to quickly trace crime guns in order to reduce gun violence in our country?

Answer. The ability to quickly trace crime firearms is vital to reducing gun violence for a number of reasons, including because quick firearms tracing is critical to law enforcement in their efforts to link suspects to firearms in criminal investigations and to detect illegal firearms traffickers.

ATF is the only Federal agency that can trace firearms used in crimes. ATF's National Tracing Center (NTC) traces firearms used or suspected to have been used in crimes in order to provide investigative leads to law enforcement. The NTC traces firearms annually for more than 8,500 Federal, State, local, and international law enforcement agencies. In fiscal year 2019, the NTC processed 452,047 firearms trace requests. In fiscal year 2020, the NTC increased the number of trace requests by 8.6 percent to a total of 490,844 trace requests.

The demand for timely and accurate trace data will continue to grow as a key investigative tool to quickly identify and apprehend the most violent firearms offenders.

Question 3. At your confirmation hearing before the Senate Judiciary Committee, you expressed concern about the death penalty, and particularly the disparate impact it has on Black Americans and communities of color.

3a. When do you expect the Justice Department to reinstate its previous policy, under which the Federal Bureau of Prisons would not be ordered to schedule any Federal executions?

Answer. On July 1, 2021, I issued a memorandum imposing a moratorium on all Federal executions while a review of the Department's policies and procedures is pending.

Question 4. Earlier this year, I joined Senator Durbin in reintroducing the Federal Death Penalty Prohibition Act of 2021, bicameral legislation to prohibit the use of the death penalty at the Federal level and require re-sentencing of those currently on death row.

4a. Will you commit to working with Congress to ensure this legislation is passed and enacted into law?

Answer. The serious concerns that have been raised about the continued use of the death penalty across the country—including the apparent arbitrariness in its application, its disparate impact on people of color, and the number of innocent people wrongfully convicted and sentenced to death—deserve careful study and evaluation by both the Justice Department and Congress. I would welcome the opportunity to work with you and other Members of Congress to ensure that everyone in the Federal criminal justice system is treated fairly, humanely, and afforded the rights guaranteed by the Constitution and laws of the United States.

Question 5. In 2018, the Supreme Court held that tracking individuals' movements using cell phone data requires a warrant. However, many government agencies purchase location information from data brokers to circumvent that requirement.

5a. To what extent does the Justice Department purchase location information from data brokers? Please provide a detailed explanation—including any governing memoranda or guidance—outlining when, and under what circumstances, the Justice Department purchases location information.

5b. How much has the Justice Department spent over the fiscal years following the Supreme Court's 2018 decision purchasing cellphone location data? Please provide as much detail as possible about amounts expended.

Answer. Consistent with the Supreme Court's 2018 Carpenter decision and Justice Department guidance, as a general matter, the Department's law enforcement components advise that they do not purchase location information from third party vendors or data brokers without a warrant.

ATF advises that the Bureau acquired the use of Fog Data Science (FOG), a company that tracks location information via user Advertiser ID information without identifying the person associated with the user Advertiser ID. FOG is a commercial service generally used by companies for direct marketing purposes. ATF first used the service in late May 2020 to assist with a high-profile arson investigation and

acquired a contract for a portal in July 2020. During 6 months of use, FOG was used in less than 20 investigations, and ATF allowed the contract to expire in December 2020 because the information provided was ultimately not useful in our investigations. While FOG was initially used for approximately 30 days without seeking a warrant because the data was publicly available, out of an abundance of caution ATF developed and used guidelines requiring a warrant for its use.

Question 6. At your confirmation hearing, you spoke about the need for agencies to "generously" interpret the text of the Freedom of Information Act (FOIA). The Justice Department is responsible for enforcing FOIA compliance across the Federal Government.

6a. How does the Department plan to "generously" interpret the Freedom of Information Act with respect to FOIA requests made to the Justice Department? Does it have adequate resources to meet that goal?

6b. How will the Department ensure that other Federal agencies will also "generously" interpret the text of FOIA in responding to FOIA requests and generally complying with the statute?

Answer. Without accountability, democracy is impossible. And democratic accountability requires the kind of transparency that FOIA makes possible.

That is why the Justice Department takes its special role in overseeing and encouraging government-wide compliance with FOIA very seriously and will continue to build on our efforts to ensure the faithful and effective implementation of the law both within the Department and across the Federal Government.

To these ends, the Justice Department's Office of Information Policy (OIP) develops policy guidance for Executive Branch agencies on FOIA, provides legal counsel and training to agency personnel on the procedural and substantive aspects of the Act, and oversees agency compliance with the law.

The Department works hard to ensure that all agencies apply the law with the presumption of openness that is at the core of our FOIA Guidelines and that has since been codified in FOIA itself. OIP assists agencies with implementation of the requirements of the through the guidance, training, and legal counsel it provides, including its a comprehensive legal treatise on FOIA entitled *The United States Department of Justice Guide to the Freedom of Information Act.* The Guide includes detailed discussions of FOIA's procedural requirements, nine exemptions, litigation considerations, and detailed analysis of the key judicial opinions issued on the FOIA. OIP updates each chapter of the Guide on a rolling basis as significant new developments in FOIA occur.

In addition, OIP has sponsored a series of "best practices" training so that agencies can learn from one another what FOIA strategies are the most successful. In addition, the Department will continue to keep agencies accountable in their administration of FOIA by requiring agency Chief FOIA Officers to report on five key areas of FOIA administration: (1) applying a presumption of openness, (2) having effective systems in place for processing requests, (3) increasing proactive disclosures, (4) using technology, and (5) improving timeliness and reducing backlogs. In addition to the above efforts, OIP will continue to work with agencies both directly and as part of the Chief FOIA Officers Council to promote best practices and leverage resources for the benefit of governmentwide FOA administration.

Both within the Department and government-wide, the demands FOIA imposes on government offices is significant. In fiscal year 2020 alone, the Department received 86,729 requests and overall, the government received 790,688 requests. FOIA requests require careful time and attention so that appropriate information is released while exempt information is withheld. OIP is currently undertaking efforts to leverage technological advances to increase the efficiency of FOIA processing.

I believe the President's fiscal year 2022 budget request will enable us to maintain our commitments under FOIA.

Question 7. When using cell site simulators in foreign intelligence matters in the United States, does the Justice Department always do so pursuant to a warrant from a FISA judge, absent an emergency? Please provide a detailed explanation for when, and under what circumstances, the Justice Department uses cell cite simulators without a warrant from a FISA judge in the absence of an emergency.

Answer. The Department of Justice uses cell-site simulator technology to help fulfill its mission to ensure public safety, including by apprehending fugitives, locating kidnapping victims, and assisting in drug investigations. The Department has put into place a number of procedural safeguard to ensure this technology is used responsibly and consistent with the all of the requirements and protections of the Constitution and applicable statutory authorities.

On September 3, 2015, the Department announced a policy (the "Policy") regarding its use of cell-site simulator technology designed to enhance transparency and accountability, improve training and supervision, establish a higher and more consistent legal standard, and increase privacy protections. The Policy covers all four DOJ law enforcement components that use CSS technology—namely, the Federal Bureau of Investigation (FBI), the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), the Drug Enforcement Administration (DEA), and the U.S. Marshals Service (USMS). Each of DOJ's law enforcement components has instituted standard operating procedures and/or protocols to fully implement the Policy.

As the Policy states, "When acting pursuant to the Foreign Intelligence Surveillance Act, Department of Justice components will make a probable-cause based showing and appropriate disclosures to the court in a manner that is consistent with the guidance set forth in this policy." And as the Policy makes clear, the general requirement is that "law enforcement agencies must now obtain a search warrant supported by probable cause and issued pursuant to Rule 41 of the Federal Rules of Criminal Procedure (or the applicable state equivalent)."

In accordance with this Policy, to the extent that the Department has sought, or will seek, to use cell-site simulator technology to acquire foreign intelligence information, absent an emergency, the use of that CSS must be authorized pursuant to a showing of probable cause.

Since the issuance of the Policy in 2015, the Department's National Security Division advises that the Department has not used cell-site simulator technology to acquire foreign intelligence information without a warrant issued by a judge of the Foreign Intelligence Surveillance Court.

QUESTIONS SUBMITTED BY SENATOR JEFF MERKLEY

Question 1. The City of Portland has been party to a settlement agreement since 2014 for excessive use of force. The Department of Justice evaluated more than 6,000 use of force incidents related to demonstration activity in the summer of 2020 just for the Portland Police Bureau alone. This use of force to engage with civilians is commonplace across the country, what more can the Department of Justice do to curb excessive use of force in police bureaus, particularly when engaging with crowds?

Answer. With regard to the Justice Department's settlement agreement with the City of Portland, we have filed periodic reports assessing the City's compliance with the agreement and providing guidance for achieving full compliance. The Department's most recent compliance report, filed in February 2021, found that the City had regressed in a number of significant areas, including use of force, training, accountability, and community engagement. The Department is currently negotiating with the City to determine how to resolve our compliance concerns.

On April 21, 2021, the Department of Justice opened a civil pattern or practice investigation into the Minneapolis Police Department and the City of Minneapolis. On April 26, 2021, the Department announced a pattern or practice investigation into the Louisville/Jefferson County Metro Government and the Louisville Metro Police Department. The Department opened both investigations under the Violent Crime Control and Law Enforcement Act of 1994, 34 U.S.C. § 12601 (Section 12601). This statute prohibits law enforcement agencies from engaging in patterns or practices of conduct that deprive people of their rights under the Constitution or Federal law. In both investigations, the Department will investigate whether police officers in Minneapolis and Louisville are engaging in a pattern or practice of excessive force, among other things. The Department is also investigating whether police officers in each city are using excessive force against people engaged in activities protected by the First Amendment, including protests or demonstrations. If the Department determines that police in either city are engaged in a pattern or practice of excessive force, including excessive force during demonstrations or protests, Section 12601 authorizes the Attorney General to file a lawsuit to obtain equitable or declaratory relief to address the pattern or practice. Since the passage of Section 12601 in 1994, the Department has investigated more than 70 law enforcement agencies to ensure that constitutional and Federal rights, including the right to be free from excessive force, are upheld.

Additionally, through the Department's grant programs, the Office of Justice Programs, Bureau of Justice Assistance (BJA) and the Community Oriented Policing Service (COPS) promote de-escalation principles. BJA recently developed a new training series for State, local, and Tribal officers entitled "Crisis to C.A.L.M." The training emphasizes how to remain calm in difficult or stressful situations while protecting the constitutional rights of all. A summary of some of the other training

and technical assistance that BJA and COPS offers to support agencies in developing effective practices and policies with regard to engaging with civilians, including large-scale events involving crowds, include:

Additional Departmental efforts and resources include:

—The *COPS Office Collaborative Reform Initiative Technical Assistance Center (CRI–TAC)* program provides critical and tailored technical assistance resources to State, local, territorial, and Tribal law enforcement agencies on a wide variety of topics. It features a "by the field, for the field" approach while delivering individualized technical assistance using leading experts in a range of public safety, crime reduction, and community policing topics. CRI–TAC is a public service and offered at no-cost to agencies. CRI–TAC brings together the 10 leading law enforcement stakeholder associations to the table to assist in implementing this technical assistance. The program provides assistance in a wide variety of areas including de-escalation, community engagement and use of force. *Collaborative Reform Initiative for Technical Assistance Center|COPS OFFICE (usdoj.gov)*

—The COPS Office has produced guidance documents for agencies on responding to mass protest events. These include an after action assessment of Ferguson Police Department's *COPS Office: Grants and Resources for Community Policing (usdoj.gov)* and Minneapolis Police Departments *COPS Office: Grants and Resources for Community Policing (usdoj.gov)* handling of protests in the wake of high profile incidents. These resources offer lessons learned and recommendations for best practices in protest policing and mass demonstration responses.

—The COPS Office is currently soliciting for applications for funding to support agencies in their de-escalation training and implementation efforts *Community Policing Development: De-escalation Training Solicitation|COPS OFFICE (usdoj.gov).* Funding will be provided to national training providers and directly to agencies in order to develop and implement comprehensive de-escalation training and programs for law enforcement agencies.

—De-escalation efforts and programs should not be viewed in isolation from efforts to build community trust in law enforcement. The wide variety of COPS Office programs, services, and resources are oriented towards building that trust. *COMMUNITY PARTNERSHIPS|COPS OFFICE (usdoj.gov)* and *BUILDING TRUST|COPS OFFICE (usdoj.gov)* among other programs and materials.

Question 2. In the course of the Department of Justice's work on pattern and practice investigations that occasionally arrive at consent decrees or settlement agreements for civil rights violations, is it standard practice to investigate ties between that law enforcement jurisdiction and extremist groups? What training does the Department of Justice currently offer to State, local, Tribal, or territorial law enforcement entities to identify extremist groups that attempt to infiltrate law enforcement ranks?

Answer. If facts came to light during any of the Department's investigations of law enforcement agencies that officers were working in concert with criminal extremist groups, or that such groups had infiltrated a law enforcement agency, the Department would use all of the tools at its disposal to address this serious problem. Such conduct may contribute to a pattern or practice of conduct that deprives individuals of their constitutional or Federal statutory rights.

The Department is authorized by statute to address such patterns or practices through its enforcement of the Violent Crime Control and Law Enforcement Act of 1994, 34 U.S.C. §12601. Depending on the circumstances, officers working in concert with criminal extremist groups may also run afoul of numerous Federal criminal laws, including: the deprivation of rights under color of law, 18 U.S.C. §242; conspiracy to injure, threaten, or intimidate a person in the exercise or enjoyment of their rights, 18 U.S.C. §241; or Federal hate crime laws, such as 18 U.S.C. §§245, 247, and 249, and 42 U.S.C. §3631.

In addition, the Department of Justice is currently enforcing 16 settlements with law enforcement agencies, including 12 consent decrees, as well as two post-judgment orders, related to findings by the Department that these agencies were engaged in a pattern or practice of conduct that deprived individuals of their rights under the Constitution or Federal law. These law enforcement agencies typically have policies that prohibit officers from discriminating against protected groups, associating with known criminals, or engaging in on- or off-duty conduct that would tend to bring disrepute to the law enforcement agency. These policies prohibit officers from working, on- or off-duty, in concert with criminal extremist groups.

Through its consent decrees, settlements, and post-judgment orders, the Department ensures that law enforcement agencies enforce these policies.

The BJA State and Local Anti-Terrorism Training (SLATT) courses educate State, local, Tribal, and territorial law enforcement officers with regard to domestic terrorism and address "extremist groups" consistent with the Director of National Intelligence's (DNI) unclassified summary assessment of Domestic Violent Extremism. Attendees are provided definitions, oversight, signs of these types of groups and possible behaviors of their members. Having this basic information assists law enforcement, at all levels, to identify attempts at agency infiltration by extremists.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

Question 1. What are the ATF and DOJ doing to strengthen the oversight of gun dealers and prevent stolen guns from being trafficked into the illegal market?

Answer. The goal of ATF's illegal firearms trafficking enforcement efforts is to reduce violent crime by stemming the flow of firearms to violent criminals. ATF identifies, investigates, and arrests individuals and organizations that illegally supply firearms to prohibited individuals. This effort includes ATF's oversight of Federal Firearms Licensees (FFLs) and its investigation of burglaries and robberies of FFLs, which is why the fiscal year 2022 budget proposes a significant program increase of $12,736,000 and 84 new positions (including 79 Industry Operations Investigators).

On June 23, 2021, the Department announced further steps that ATF would take to address the illegal trafficking of firearms and to keep guns out of the wrong hands. For example, absent extraordinary circumstances, ATF will initiate proceedings to revoke the license of dealers that willfully violate the law by failing to conduct required background checks, falsifying records, failing to respond to trace requests, refusing to permit ATF to conduct inspections, or transferring firearms to persons who are prohibited from owning them. ATF is also taking steps to formalize a data-driven approach to prioritizing inspection resources; improve information sharing with State, local, Tribal, and Territorial partners; and crack down on gun traffickers through five new cross-jurisdictional strike forces that will focus on addressing significant trafficking corridors that fuel violence.

Question 2. Is the Department developing a concrete plan to ensure that prosecutors and the Department reflect our nation's diversity?

Answer. The Department maintains comprehensive outreach efforts to support the recruitment of attorneys who reflect our Nation's rich diversity.

Those efforts include broad dissemination of available attorney vacancies to diversity organizations and law schools across the country, and regular participation in events and programs sponsored by public interest organizations and national diversity bar associations including, but not limited to, the Hispanic National Bar Association, National Asian Pacific American Bar Association, National Bar Association, National Black Prosecutors Association, National LGBT Bar Association, and the South Asian Bar Association of North America.

The Department's recruitment strategy also includes fostering relationships with all law schools, including regular presentations to law students encouraging them to intern at the Department and connecting students with current Department Attorneys through the Attorney Ambassador Program that provides law students with the opportunity to learn more about the Department or a particular component by talking one-on-one with a DOJ attorney. Department components may engage in additional outreach efforts beyond those undertaken by the Department's Office of Attorney Recruitment and Management (OARM).

QUESTIONS SUBMITTED BY SENATOR SUSAN M. COLLINS

Question 1. Our country is experiencing a drug overdose crisis. Indeed, Maine had 502 overdose deaths in 2020, an increase of 32 percent over the 380 Mainers who died from a drug overdose in 2019. In a statistic that shocked and saddened me, Maine saw more drug-related deaths in 2020 than deaths from COVID–19. The average age of those who died was just 43 years old.

The preliminary data for this year looks even worse. In my opinion, that is a tragedy, and the Maine Attorney General has noted that this is at least in part due to "alterations in the illicit drug supply." In Maine and nationally, the high number of fatal overdoses continues to be driven by illicit, non-pharmaceutical fentanyl and fentanyl analogs, and the majority of fatalities in Maine involved two or more drugs.

1a. According to a fact sheet released by the Department of Justice, the President's budget requests $480.9 million in resources to bolster drug enforcement and related efforts. How would these funds help address the drug overdose crisis in this country?

Answer. The Drug Enforcement Administration (DEA) will continue to use all of the tools at its disposal—administrative, civil, and criminal—to help reduce the number of overdoses in the United States. In addition, DEA will expand education, outreach, and prevention efforts to counter our Nation's drug threats.

Operation Engage is one of DEA's hallmark drug prevention initiatives and is an example of what can be accomplished when law enforcement and our community outreach partners join forces. This prevention program builds upon the DEA 360 Strategy by allowing DEA Field Divisions to address the top illicit drug that presents the greatest threat to a community, even if it is not opioids. Operation Engage is currently deployed to 11 of DEA's 23 field divisions, including the New England Division. In fiscal year 2022, DEA is requesting $3.75M to expand Operation Engage to all DEA Field Divisions. These resources will fund a Community Outreach Specialist for each DEA Field Division as well as operational funding to support travel and other outreach expenses. Having Community Outreach Specialists across the country will increase DEA's ability to collaborate with local community stakeholders and implement tailored education and prevention strategies. Through Operation Engage, DEA will expand partnerships with local law enforcement and community-based groups to combat the supply and demand sides of specific drug threats and combat the Nation's overdose crisis.

Many problems associated with drug abuse are the result of legitimately made controlled substances being diverted from their lawful purpose into illicit drug traffic. According to the 2019 National Survey on Drug Use and Health, 9.7 million people misused prescription pain relievers, 4.9 million people misused prescription stimulants, and 5.9 million people misused prescription tranquilizers or sedatives in 2019. The survey also showed that a majority of misused prescription drugs were obtained from family and friends, often from the home medicine cabinet. Under Federal law, all businesses that import, export, manufacture, or distribute controlled substances; all health professionals licensed to dispense, administer, or prescribe them; and all pharmacies authorized to fill prescriptions must register with the DEA. There are over 1.9 million DEA Registrants across the country. Training and outreach programs, supported by the Diversion Control Program, play an important role in educating Registrants and the public about the growing problem of diversion of pharmaceutical controlled substances throughout the U.S. Funding for the Diversion Control Fee Account will be used to help address the overdose crisis by improving education and outreach to the public and to DEA Registrants, and by supporting efforts to destroy prescription drugs outside of the existing National Take-Back Initiative framework.

The President's budget request also seeks a total of $190 million to support system-wide initiatives that expand comprehensive, locally driven responses to opioids, stimulants, and other substances through the Comprehensive Opioid, Stimulant, and Substance Abuse Program (COSSAP), which was developed as part of the Comprehensive Addiction and Recovery Act (CARA) legislation. COSSAP's purpose is to provide financial and technical assistance to States, units of local government, and Indian Tribal governments to develop, implement, or expand comprehensive efforts to identify, respond to, treat, and support those impacted by illicit opioids, stimulates, and other drugs of abuse. COSSAP aims to reduce the impact of opioids, stimulants, and other substances on individuals and communities, including a reduction in the number of overdose fatalities, as well as mitigate the impacts on crime victims by supporting comprehensive, collaborative initiatives.

Our efforts described above are just part of the Department's broader $480.9M request to address the opioid crisis.

Question 2. During your May 12, 2021, appearance before the full Appropriations Committee, I commended you and the Department of Justice for seeking to identify and prosecute the individuals responsible for the events of January 6, 2021. I also asked you about the Department of Justice resources being committed to identify and prosecute the individuals responsible for the violence last summer that was aimed at government institutions like courthouses and police stations. You agreed during the hearing to provide me with additional information, but I have yet to receive that information.

2a. Since that hearing, have you been briefed on the Department's efforts to identify and prosecute the individuals responsible for the violence last summer?

Answer. As I explained in written responses that I submitted to you on June 24, 2021 answering your Questions for the Record, the Justice Department has dedicated substantial investigative and prosecutorial resources from components across the Department and in dozens of jurisdictions nationwide to bring charges in numerous cases in connection with violence during the summer and fall of 2020 that was aimed at government institutions. In particular, the Department's Justice Management Division advises that Investigative resources totaling more than $48 million, including thousands of DOJ personnel, have been deployed from the Department's law enforcement components, including the Federal Bureau of Investigation (FBI), the United States Marshals Service (USMS), the Bureau of Prisons (BOP), the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), and the Drug Enforcement Administration (DEA).

The Justice Department has and will continue to aggressively pursue those who engage in violent criminal activity such as the destruction of property and violent assaults on law enforcement. The Department is committed to working with Congress regarding its ongoing reviews of these events and identifying areas for improvement and greater cooperation in law enforcement responses.

2b. What is the status of the Department's efforts to identify and prosecute these individuals?

Answer. Justice Department investigations and cases to identify and prosecute individuals in connection with violence aimed at government institutions during the summer and fall of 2020 are ongoing. The Department continues to review information and hold accountable those who violated the law.

In order to protect the integrity of all investigations, as a general practice, the Department does not comment on the details of particular investigations beyond the charging and other public documents, and does not comment on the existence or status of any potential investigative matter.

2c. Has the Department's approach to investigating and prosecuting crimes associated with this violent activity changed in any way since last summer?

Answer. I am not aware of any Departmental guidance that has been issued since I became Attorney General on March 11, 2021 addressing the Justice Department's approach to investigations and prosecutions stemming from violence that occurred during the summer and fall of 2020.

On January 29, 2021, on the subject of the Justice Department's general charging and sentencing policy, the Department rescinded a directive entitled *Department Charging and Sentencing Policy* (May 10, 2017) and reinstated the guidance articulated in *Department Policy on Charging and Sentencing* (May 19, 2010) to ensure that decisions about charging, plea agreements, and advocacy at sentencing are based on the merits of each case and reflect an individualized assessment of relevant facts.

In addition, the Department issued guidance to all Federal prosecutors on March 8, 2021 emphasizing the need for coordination and consistency in prosecutions involving domestic violent extremism and imposing new requirements for identifying and tracking such matters.

QUESTIONS SUBMITTED BY SENATOR BRIAN SCHATZ

Question 1. Project HOPE/HOPE Institute: In fiscal year 2020, how many entities were awarded funding through BJA's Project HOPE Opportunity Probation with Enforcement (HOPE) model replication program—the Swift, Certain, and Fair (SFC) Supervision Program?

1a. Of the awardees, how many entities asked for and received grants intended for States with multiple sites of implementation?

1b. How many asked for and received funding for local implementation only? Have any Federal funds gone to State or local agencies that seek to expand HOPE principles beyond community corrections—e.g., into prisons? If not, does the Department plan to expand funding for such projects in the future?

Answer. BJA received seven applications in fiscal year 2020, of which six were for local implementation at the county or city level.

Up to and including the fiscal year 2021 solicitation, BJA has funded the application of the HOPE principles to community supervision systems and populations only.

BJA is open to expanding the application of the HOPE principles to prison systems and populations.

1c. Please provide an update on the HOPE Institute, and specifically the Department's transition of the SCF Resource Center into the HOPE Institute.

Answer. BJA solicited applications for the HOPE Institute seeking a training and technical assistance (TTA) provider to provide information, resources, and TTA to State, local, and Tribal community supervision agencies seeking to develop and test new or enhanced applications of the SCF principles using a data-driven, collaborative process that is informed by research and responsive to local circumstances. The competitive solicitation was posted *online* on May 14, 2021 and applications were due on July 13, 2021.

1d. Will the HOPE Institute also compile and share research, in addition to training and best practices?

Answer. Yes. The fiscal year 2021 solicitation, entitled *Applying the Principles of Swiftness, Certainty, and Fairness,* states that the selected applicant will "[a]dvance the state of knowledge regarding best practices and lessons learned from SCF implementations and evaluations," including by "[m]aintain[ing] and update[ing] a website to serve as a clearinghouse of information and resources on relevant best practices and lessons learned" and reviewing the results of any new research and disseminating key findings for the field.

1e. If a designated funding mechanism were to be created for research and evaluation of HOPE/SCF programs, what agency would be best-positioned to manage related grants?

Answer. The National Institute of Justice (NIJ) would be best positioned within the Office of Justice Programs to manage HOPE/SCF research and evaluation grants, as they have done in the past.

More information is available online about NIJ's *evaluation of the HOPE Demonstration Field Experiment.*

1f. What effort has been made to collect and disseminate research on HOPE/SCF programs that have not received Federal funding?

Answer. The SCF Resource Center is currently responsible for scanning, synthesizing, and making publicly available any new research on this model including research on non-federally funded efforts.

Question 2. Prison Rape Elimination Act: The Prison Rape Elimination Act (PREA) of 2003 mandates that the Bureau of Justice Statistics (BJS) "shall carry out, for each calendar year, a comprehensive statistical review and analysis of the incidence and effects of prison rape." BJS reports are key to efforts to address sexual abuse in our juvenile facilities, jails and prisons. In a recent mandated report on sexual abuse in detention, BJS withheld critical data about characteristics of perpetrators and victims and about dynamics surrounding abuse in detention. Failing to release this critical information severely limits efforts to prevent, detect, and respond to sexual abuse in detention.

2a. Will you ensure that BJS timely releases all data collected from all mandated data collections and reports regarding sexual abuse in detention?

Answer. Since 2009, BJS has released a formal annual report by the end of June each year that describes BJS's activities to collect data on prison rape as required in the Prison Rape Elimination Act. The most recent report, PREA Data Collection Activities, 2021 was released June 29, 2021. These reports summarize BJS's data collection, analysis activities, and release of substantive reports each year.

Currently, BJS has three data collections for PREA: the National Survey of Youth in Custody, the National Inmate Survey, and the Survey of Sexual Victimization.

Each of these collections is an independent effort and follow the standard statistical procedures for collecting reliable and high-quality data. BJS is committed to releasing publications and datasets from these programs, while ensuring data quality, timeliness, and confidentiality. BJS limits access to PREA data only as necessary to protect confidentiality of respondents.

In general, BJS has experienced delays in releasing publications due to limited resources. BJS plans to publish additional analysis from the PREA datasets going forward.

2b. One recent BJS report reveals that, although prisoners have more effective methods for reporting sexual abuse inside corrections facilities, meaningful investigations are not regularly occurring. How will the Department improve investigations of sexual abuse reported by incarcerated people?

Answer. The Justice Department recognizes the significant challenges associated with investigations of sexual abuse and sexual harassment in confinement facilities.

In response to these challenges, the Department is currently working with its partners at the National PREA Resource Center to develop a practical, user-friendly training that targets practitioners across the country who are responsible for these types of investigations. A primary goal of this unique training is to develop skills necessary to conduct these investigations effectively, as required by the PREA standards. To increase the reach and impact of this resource, it will be offered virtually. And after a pilot of the training in 2022, it will be made widely available across the country.

2c. PREA also requires the Department to establish a Review Panel on Prison Rape that shall hold public hearings every year with selected corrections officials to understand and identify "common characteristics of prisons and prison systems with a high incidence of prison rape, and the identification of common characteristics of prisons and prison systems that appear to have been successful in deterring prison rape." Will the Department ensure that the required public hearings occur every year?

Answer. Last year, the Justice Department appointed all new members to the Review Panel on Prison Rape (Panel). The duty of the Panel is to hold annual public hearings concerning the operations of the three prisons with the highest incidence of sexual victimization and the two prisons with the lowest incidence of sexual victimization in each category of facilities identified in data gathered by the Bureau of Justice Statistics (BJS). The new Panel plans to hold hearings this year based on BJS's National Survey of Youth in Custody, 2018.

The BJS has published the following three products based on this survey:

—*Sexual Victimization in Juvenile Facilities Reported by Youth in Juvenile Facilities, 2018* (December 11, 2019)

—*Sexual Victimization Reported by Youth in Juvenile Facilities, 2018—Supplemental Tables* (June 2020)

—*Sexual Victimization Reported by Youth in Juvenile Facilities, 2018—Supplemental Tables* (November 2020).

2d. Congress amended PREA in late 2018 by enacting significant protections to ensure the quality of PREA audits and PREA auditors. The amendment tasks the PREA Management Office of the Bureau of Justice Assistance with additional, robust oversight functions, including evaluating all auditors and audits for adherence to quality standards and decertifying auditors who fall short. The PREA Management Office has not yet complied with its new audit oversight duties to establish and administer a system for assigning auditors to all Federal, State, and local correctional facilities due to insufficient funding. Will you review the resource and staffing needs of the PREA Management Office and commit to ensuring that they have the support they need to fulfill their congressionally mandated duties, in addition to their existing functions? Will you commit to continuing grant funding for support to States and local jurisdictions for PREA implementation work?

Answer. The Department remains steadfastly committed to preventing, detecting, and responding to sexual abuse and sexual harassment in confinement facilities nationwide.

DOJ and its PREA Management Office continue to work hard to leverage the annual PREA appropriation to successfully carry out DOJ's many legal requirements, as defined in the PREA statute and the national PREA Standards.

The PREA Management Office advises that it has seen a strong commitment from Governors to move their States towards PREA compliance. In 2020, twenty-one governors submitted certifications of full compliance with the PREA standards for State-operated facilities, including prisons. Twenty-nine governors submitted assurances to DOJ indicating that they will use portions of certain DOJ grants to come into compliance in the future. In addition, the Department will commit to reviewing the resource and staffing needs of the PREA Management Office.

2e. Incarcerated survivors of sexual abuse are some of the most isolated and underserved survivors of interpersonal violence. They are also a population that mainstream service providers struggle to serve. The PREA standards require that survivors of sexual abuse in detention have access to many of the same kinds of services to which all victims of crime are entitled. A national hotline—one number that a person in a prison or jail could call from every State and territory—would both ensure that incarcerated survivors have the most

basic of services and signal that we, as a nation, affirm that rape is not part of the penalty. I introduced bipartisan legislation on this issue, the Sexual Abuse Services in Detention Act. Would the Department support such a national hotline? Do I have your commitment to work with me on my bill?

Answer. The Department of Justice welcomes the opportunity to work with Congress on legislation to create a national sexual abuse hotline and supports the overarching goal of providing increased resources to victims of sexual abuse and sexual harassment in detention for counseling, healing, and incident reporting. The Bureau of Justice Assistance and the Office on Violence Against Women are partnering to determine how best to create and implement a national service line for incarcerated victims of sexual abuse. This includes an in-depth planning process to identify the scope of services to be provided, training requirements for service line staff, and security constraints for correctional facilities, should a service line be authorized and appropriated.

Since March 2021, Justice Department staff have engaged with your and Senator Cornyn's offices to discuss the pending legislation. The Department looks forward to continuing to work with Congress to ensure that proposed legislation is informed by efforts already underway.

Question 3. BOP Transgender Guidance: In 2018, I sent a letter to then-BOP Director Hugh Hurwitz regarding the agency's decision to change their Transgender Offender Manual. Under these changes, BOP would use a person's "biological sex" to determine initially where a person will be housed. The revised manual also states that assigning a person to a facility based on the person's identified gender is appropriate "only in rare cases." I expressed concerns that these changes put transgender people in Federal prison at a higher risk of sexual abuse, and was in contravention of PREA. Transgender people in prison are already more likely to experience sexual abuse than the cisgender prison population. In my letter, I urged Director Hurwitz to reverse this policy. Unfortunately, he did not. Do I have your commitment to reverse this harmful policy and ensure the safety of transgender people in prison, including PREA's requirement that housing decisions for transgender people be made on a case-by-case basis?

Answer. Executive Order 13988, signed by the President on January 20, 2021, calls for every person to be treated with respect and dignity without being subject to discrimination based on their gender identity or sexual orientation.[1] Department of Justice components are reviewing currently all existing orders, regulations, guidance documents, policies, programs, or other agency actions for compliance and consistency with the Executive Order. As part of this effort, the Bureau of Prisons is in the process of reviewing the Transgender Offender Manual.

Question 4. Correctional Education: In 2016, the Department began its "Roadmap to Reentry" effort to enhance Federal reentry practices. This, in part, led to the proposed creation of a unified school district within the Federal Bureau of Prisons (BOP). While the previous administration scrapped these plans, I introduced legislation to ensure that adequate access to education programming can be found in all BOP facilities, and to collect and share the research and best practices on correctional education. Do I have you commitment to work with me on my bill, the *Promoting Reentry through Education in Prisons Act,* to support efforts to improve prison education programming within BOP?

Answer. The Justice Department strongly supports efforts to improve educational opportunities for inmates in Federal custody, and I would welcome the opportunity to talk with you about the *Promoting Reentry through Education in Prisons Act.*

Question 5. Marijuana Research: In a 2019 response to me, National Institutes of Health (NIH) Director Francis Collins and Acting Food and Drug Administration (FDA) Commissioner Norman Sharpless supported efforts to approve additional entities to supply marijuana for research. In addition, NIH and FDA supported "enabling researchers holding Schedule I licenses for marijuana to obtain products from State authorized dispensaries." While I am pleased that the Drug Enforcement Administration (DEA) has announced efforts to approve new manufacturers for marijuana research, more can be done by the agency.

5a. Do I have your commitment to work with Senators Feinstein and Grassley, and me on our marijuana research bill—the Cannabidiol and Marihuana Research Expansion Act (S. 253)?

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[1] Exec. Order. No. 13988, 86 Fed. Reg. 7023 (January 25, 2021).

Answer. Yes. The Justice Department welcomes the opportunity to work with you and Senators Feinstein and Grassley on this and any other legislation.

5b. Does the Department plan to approve the estimated full number of licensed manufacturers of marijuana for research—15, as noted in DEA's final rule, "Controls To Enhance the Cultivation of Marihuana for Research in the United States"—to provide an adequate and uninterrupted supply?

Answer. DEA has approved five licenses to date. DEA evaluates registrants on a case-by-case basis subject to the requirements of the Controlled Substances Act (CSA) and is currently reviewing several additional pending applications.

5c. Does the Department support efforts to enable researchers holding Schedule I licenses for marijuana to obtain products from State authorized dispensaries?

Answer. The Justice Department continues to prioritize efforts to expand access to marijuana for research purposes. To this end, on May 14, 2021, DEA announced that it expects it will soon register additional manufacturers to cultivate marijuana for research purposes. The Justice Department stands ready to work with you and other Members of Congress to increase opportunities for medical and scientific research.

5d. Will the Department work across the administration to restart interagency coordination efforts to address issues of marijuana control and research?

Answer. Yes. The Department is currently engaged in interagency discussions on this subject and would welcome the opportunity to discuss these matters further with you and your colleagues.

Question 6. State Courts: State courts handle the vast majority of all cases in our justice system—over 83 million cases per year. As such, they are often the laboratories of innovation when it comes to issues such as mental health and substance abuse diversion, eviction diversion, fines and fee alternatives, juvenile delinquency and child welfare, and the development of other innovative ways to improve the delivery of justice nationwide. State courts have traditionally not received programmatic support or been given a seat at the table on criminal justice reform issues that will largely be dealt by State courts across the country.

6a. Will the Department work with State court leaders and leverage Federal investments to assist in the development of innovative and supportive programs to assist in the administration of Justice across the States and the Nation?

Answer. Yes, the Department is committed to working with State court leaders to address these critical issues. First, we can ensure our State court leaders are aware of what funding opportunities they are eligible for and conduct targeted outreach to State court leaders when these opportunities become available.

Examples of eligible funding opportunities include the Comprehensive Opioid, Stimulant and Substance Abuse Program (COSSAP), the Adult Drug Court Program, and the Justice and Mental Health Collaboration Program (JMHCP).

In addition, in coordination with the State Administering Agencies, the Office of Justice Programs will ensure that State court leaders are aware of funding opportunities at the State level under the Justice Assistance Grant program.

Moreover, through many of our training and technical assistance programs, we provide assistance to State leaders to conduct criminal justice strategic planning. We can ensure State court leaders are at the table during these critical priority discussions.

Examples of how BJA has supported innovative approaches to support State and local criminal courts include the following:

—BJA offers technical assistance and support for strategic planning related for State Administering Agencies (SAA) that oversee BJA's Justice Assistance Grants, which give States autonomy to identify and nurture innovation. This year, BJA began a coordination meeting to identify and support the needs to States, especially courts, to address the requirements of the Sixth Amendment in pandemic, exploring innovative approaches that States can use to support courts and to prepare for reopening.

—In COSSAP, States can develop State led approaches to enhance treatment, support overdose response and deflection from the system to treatment and diversion by law enforcement and courts & prosecutors, and deepening treatment and recovery support services to courts across the States.

—Under the Adult Drug Court program, BJA meets regularly with State drug court coordinators to identify issues and needs, to partner and leverage training capacity of States and support fidelity audits and collection and analysis of data about program activity and efficacy.

6b. Do I have your commitment to work more closely with State court leadership on the development and implementation of many of the criminal justice reforms and improvements that this administration seeks to advance?

Answer. Yes, you have my commitment to work with State court leaders on the development and implementation of the criminal justice reforms and improvements we are working to advance. For example, OJP intends to invite State court leaders to listening sessions and conduct other open sessions to gather information and insight from the field.

SUBCOMMITTEE RECESS

Senator SHAHEEN. The hearing is adjourned.

[Whereupon, at 4:14 p.m., Wednesday, June 9, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

TUESDAY, JUNE 15, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:07 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chairwoman) presiding.

Present: Senators Shaheen, Manchin, Van Hollen, Moran, Boozman, Capito, Kennedy, and Braun.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. At this time I would like to call the Subcommittee on Commerce, Justice, and Science and Related Agencies of the Senate Appropriations Committee to order.

Good afternoon. As I said, we hope that we will be joined, as soon as the caucuses are ended, by some of the other Members of the subcommittee, but for now, I am pleased to be joined by my Vice Chair, Senator Moran, and for the hearing with the new NASA Administrator, Bill Nelson, who we are so pleased to be able to welcome back to the Senate.

Now since in his previous capacity, Administrator Nelson represented the State of Florida and did a very good job of pointing out the importance of Florida to our space program.

I would like to begin by being a little parochial and talking about the fact that my home State of New Hampshire is also a space State. We had the first U.S. man in space, was from New Hampshire, Alan Shepard, and of course our teacher in space, Christa McAuliffe was also from New Hampshire. New Hampshire made parts that provide communications, thermal protection, fluid transfer, and more, for NASA missions operating in deep space. We still build and operate major instruments on NASA satellites to study solar physics, the Moon, and the Earth. We are very pleased that at the University of New Hampshire we have one of the most expansive and best-regarded heliophysics programs in the country.

We are very ready in New Hampshire to contribute across the board to the exciting science exploration and aeronautics included in NASA's $24.8 billion budget request, this represents $1.5 billion or 6.7 percent increase above the fiscal year 2021 level.

Now there is a lot to like in this budget request, it includes a $20 million increase for NASA's Office of STEM Engagement, which we know is critical to our future. The funding will allow more students to contribute to NASA's mission with hands-on learning so they can join a diverse science and engineering workforce in the future.

Of course, as we think about what we have got to do in the future, we have to address climate change. Climate change, as we know, is an existential threat that is already compromising our environment, public health, transportation, infrastructure, economies, and even military installations. I know the administrator appreciates that because he has seen what has happened in Miami, and the fact that we have got to address the changes in our climate.

What this budget does is step up our commitment to NASA's world-class Earth Science Research so we can better understand our changing planet, and also to sustainable aviation so we can meaningfully cut aircraft emissions. I am also pleased to see the other investments in science, enabling ongoing missions to continue, and providing funds needed due to the impacts of the COVID–19 pandemic on NASA centers and its commercial and academic partners.

With respect to Artemis, NASA's missions to send the first woman and the first person of color to the Moon, there has been a lot of discussion of NASA's decision to select only one contractor for the Human Landing System Demonstration Mission to land on the Moon as early as 2024, I want to just point out that NASA's rhetoric blaming Congress and this subcommittee for the decision to do just one contractor really rings hollow. I hope we can get to this in our questioning, because in fiscal year 2021, NASA projected that it would need $4.4 billion for landers in fiscal year 2022. Instead, the budget before us requests only $1.2 billion for the HLS Program.

I am interested in how NASA intends to stimulate competition while continuing progress towards its planned program that will use the Gateway as a basis for excursions to the Moon. Now, I know that you are not going to be able to answer some of these questions because of the ongoing GAO protest of NASA's decision. However, I hope we can discuss where competition is really critical to bring the best value to government.

NASA at its best inspires us, and we certainly needed some joy and inspiration over the last year. We soared with Bob and Doug as SpaceX Demo-2 mission became the first mission to launch astronauts from U.S. soil since 2011. We crossed our fingers through Perseverance's 7 minutes of terror, and we exhaled when the rover landed safely and precisely. It has continued to amaze us with the sounds of Mars, and the flights of the Ingenuity Helicopter.

I am looking forward to what we will see in the coming year as NASA continues to make spectacular discoveries, fly the X–57 electric aircraft, and see long awaited launches for Boeing Starliner, the James Webb Space Telescope, and the Artemis I Mission. There is a lot on your plate, Mr. Administrator, we are ready to work with you. We look forward to that.

I will now recognize the Ranking Member, Senator Moran.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Chairwoman Shaheen, thank you very much. Administrator Nelson, welcome to this subcommittee. We look forward to fruitful conversations today and into the future. I am just, on a personal level, excited about the country being led by you as a NASA Administrator, and personally for you, I cannot imagine another capstone to a distinguished career that could bring more meaning and significance to your life.

Our last time together was your nomination hearing, and that occurred at the Commerce Committee. I hope that you are settling in at NASA. I say that so I can remind you, as you did earlier, that I am not only an authorizer but an appropriator. We look forward to being a partner and an ally in advancing the cause of space for our country.

You have the opportunity to lead an organization that is known throughout the world and serves as an instrument of discovery and inspiration for both young and old. I am reminded about the inspiration and how it can affect people, I would highlight the story of Clyde Cessna and the effects he had on Kansas that last even till today.

Clyde was a farmer in Rago, Kansas, with a knack for mechanics who attended an air exposition in 1911 and became determined to build a plane and fly it within his grasp. For 5 years he worked on his designs, ultimately starting production in 1916 in Wichita, Kansas, to build airplanes, and ever since Cessna's name has been associated with civilian aircraft. Today partnerships can be found between NASA and Kansas utilizing our State's aerospace strength while working to advance NASA's toward their future goals.

NASA's proposed fiscal year 2022 budget is $24.8 billion, an increase of $1.5 billion over the current budget, within this budget exists a number of inspirational opportunities that will certainly be the spark that leads to a future that we cannot imagine today. We are creating more Clyde Cessnas every day because of NASA.

I have seen the Artemis I rocket in action, the Orion capsule and the flight hardware being built for returning to the Moon, and there is no question that seeing our astronauts return to the lunar surface will have a lasting impact on the lives of future scientists and engineers. The Perseverance Rover and Ingenuity Helicopter are bringing us new and exciting events from the surface of Mars, and NASA will soon be flying an experimental aircraft that will enable hypersonic flight in ways that were not ever before possible.

I am pleased to see that STEM Engagement is back in the budget for NASA. It has been an issue for this subcommittee and our full committee for a long time. NASA has the opportunity to capitalize on its missions to encourage students across the country, no matter where they live to pursue activities in STEM, the Nation needs these activities to maintain and grow our capabilities for the future.

As other nations began to make strides in space exploration, we must, we must maintain our lead and leadership in space. The proposed budget presents a vision of what NASA is capable of in these unique times.

I thank you for coming today, Administrator Nelson, I look forward to our conversations not only today, but in the future on how NASA can accomplish its goals. Thank you, sir.

Senator SHAHEEN. Thank you very much, Senator Moran.

We are delighted to hear your testimony.

STATEMENT OF HON. BILL NELSON, ADMINISTRATOR, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. NELSON. Madam Chair, Senator Moran, returning to these halls brings almost a catch in my throat, because it was one of the greatest honors of my life to serve with you all in this institution and, indeed, basically a lifetime of public service. I must admit I am like a kid in a candy shop now, and every day has just been one excitement after another. This morning, very early, I went to Russia and I came back, participating in a global space conference that was held in St. Petersburg, Russia; followed up later in the morning with a call with the President of Roscosmos, talking about our mutual interest.

I certainly made a note of the fact for him to remember that, two nations that, while on terra firma, have had some difficulty with each other, both as a Soviet Union and now Russia, and the United States. Ever since 1975 we have cooperated, and we have not only cooperated, we have worked and lived together in space ever since General Tom Stafford and General Alexei Leonov rendezvoused and docked.

Those two crews in the midst of the Cold War, and our difficulties with the Soviet Union, and yet they demonstrated what can be done if you will reach beyond the politics. That has continued. Example, the Russians have built the International Space Station with us. You think about the station, think about going to the football game from one goalpost, to the other goalpost, to the end of the end zones, from end zone to end zone, that is how large the space station is right now on orbit. We have cooperated with a dozen nations as we are carrying out all the research, the activities, the space walks, and particularly our partners that helped us build the station.

Now I am mindful of your time, because I have heard witnesses that drone on and on, and I am not going to. I want to leave it for you to ask questions. My opening statement could have been the remarks that the two of you have already made.

Let me just point out a couple of stories. This, which is in most everybody's pocket, it has become almost essential to us every day. When we see something that we like we take a picture of it. That is a spinoff of space technology, because NASA developed a camera on a chip that is basically in every one of our cell phones. That is the kind of spinoff we have. You get on an airplane, now that COVID is loosening up, look out the window and look at the wing and you will see that wing turn up. That was as a result of NASA Aeronautics Research.

What they found is, you can save fuel and indeed you can get to altitude quicker. Look at Senator Moran is talking about aeronautics that is, by the way, the first A in NASA, look at the research that we have going on now. We are going to fly at the end of this year an all-electric experimental aircraft to see if, as we de-

velop it further, if we can cut down on pollution as well as fuel consumption.

Just recently NASA conducted an experiment at the Charlotte Airport, and this particular experiment because of air traffic control on the ground, as well as in the air, in the period in which the study was conducted, they saved over a million gallons of fuel in a short period of time. Ultimately, you all are going to see that in our air traffic control, what we would call the next generation of air traffic control. Get from point A to point B, by going in a straight line, instead of the routes that we often have to take on a "dog leg". With our present radar system this can direct us and you can have instant situational awareness in the cockpit.

Now I have just scratched the surface on what NASA does. Madam Chair, I want to stop there. There are some very important decisions that have to be made about us getting to the Moon and landing safely in the goal of 2024, and all along be mindful of what a very aggressive space competitor is doing.

I am talking about China. When they landed on Mars, the second nation to land on Mars with a rover, successfully, it makes no difference that we did it back in the 1970s first. It does make a difference that they are very technologically advanced, and tomorrow afternoon there is going to be an announcement out of this global conference in St. Petersburg between the Russians and the Chinese. It will be interesting to be tuned into that because the primacy of our space program, as cooperative as we have been, it is going to be important for us to be landing on the surface of the Moon with the first woman and the first person of color before our competitors do.

With that, I would turn it over to you for whatever I might try to answer, Madam Chair.

[The statement follows:]

PREPARED STATEMENT OF HON. BILL NELSON

Chairwoman Shaheen and Members of the subcommittee, I am pleased to have this opportunity to discuss NASA's fiscal year 2022 budget request of $24.8 billion. This request represents an increase of $1.6 billion, or 6.6 percent, above the fiscal year 2021 enacted level.

But first, I would like to thank you for your ongoing support for NASA. This funding aligns closely with administration priorities, including expanded climate change research; continued investment in human spaceflight through the International Space Station (ISS) and Artemis Programs that enhance global engagement and diplomacy; investments in cutting-edge research and development that fuel innovation, create high-paying jobs, grow the economy, and improve life on Earth; advancement of the U.S. aviation industrial base to build a green aviation system; and strengthening of a diverse Science, Technology, Engineering, and Math (STEM) workforce that inspires future generations.

NASA is more than the world's premier space exploration organization. NASA is a uniquely powerful source of national inspiration and international leadership. Over the past year, the NASA team has demonstrated remarkable resilience, overcoming COVID–19 challenges to press forward with a series of outstanding successes, including the historic first flight on another planet. NASA's landing of Perseverance on Mars is emblematic of an Agency, and a Nation, that can overcome challenges, to achieve whatever goals we set. To quote the President on a phone call to NASA Jet Propulsion Laboratory (JPL):

> "We can land a rover on Mars. We can beat a pandemic. And with science, hope, and vision, there's not a damn thing we can't do as a country."

With the resources entrusted to us by Congress and the American people, and the dedicated efforts of our commercial partners, we have returned human spaceflight

to American soil on American rockets. Adapting what we have learned from these efforts, we are moving rapidly to return Americans to the surface of the Moon as quickly as we can safely do so. We are committed to landing the first woman and the first person of color on the Moon. We will use all of this Nation's capacity for innovation to develop the experience and capability around the Moon that will send Americans on to Mars. We are building the Space Launch System (SLS) and the Orion crew vehicle, to make deep space exploration possible, and we will soon launch the first, uncrewed mission in the Artemis lunar exploration program. During this flight, targeted for this year, the spacecraft will fly farther than any spacecraft built for humans has ever flown.

The budget request includes funding for the development of the Block lB variant of SLS as well as funding for construction of a second Mobile Launcher, both of which will help support a robust Moon to Mars program.

On April 16, 2021, NASA announced it had selected SpaceX to continue development of the first commercial human lander that will safely carry the next two American astronauts to the lunar surface. The firm-fixed price, milestone-based contract total award value is $2.89 billion, out of total requested 5-year Human Landing System (HLS) funding of $7.8 billion. This HLS contract award is under protest as of this time. While the human landing demonstration award is under protest, NASA is continuing to prepare for competition for the follow-on landings to the lunar surface. These services will provide human access to the lunar surface using the Gateway on a regularly recurring basis beyond the initial crewed demonstration mission. By taking a collaborative approach in working with industry and international partners while leveraging NASA's proven technical expertise and capabilities, we will return American astronauts to the Moon's surface once again, this time to explore new areas for longer periods of time.

For over 20 years, NASA has maintained a continuous human presence in Earth orbit, developing technology, skills, and knowledge needed for human exploration of the Moon and Mars. The budget request ensures that there will be no gap in human presence in Low Earth Orbit (LEO) by continuing to invest in commercial LEO destinations and services. The coming year will see a second commercial partner demonstrate crew transportation and begin regular crewed flights to the ISS. This regular cadence of crew rotation missions will contribute to the foundation of a more affordable and sustainable future for American human spaceflight. In addition, this will allow more capacity and resources for research and development projects on ISS, which are improving life on Earth and proving out the viability of a LEO economy.

NASA is on Mars now and studying the planet more intensively than ever before. The request includes funding to develop the mission that will return samples from Mars to Earth. With the successful landing of the Perseverance rover, we are now operating two rovers, a lander, and a helicopter on the surface of Mars, supported by an array of orbiting spacecraft. We continue to operate a constellation of spacecraft exploring the solar system while developing new missions to Earth's Moon and Jupiter's moon Europa, as well as a mission dedicated to detecting potentially hazardous Near-Earth Objects (NEOs). Later this year, we will launch the Lucy mission to explore the Trojan asteroids in the vicinity of Jupiter, to be followed in 2022 by the Psyche mission to a metallic asteroid. These asteroids are thought to be remnants of the primordial material that formed the outer planets. NASA recently announced a major return to our nearest planetary neighbor, Venus, selecting not one but two missions that will be run out of the Planetary Missions Program Office at Marshall Space Flight Center. The first mission, DAVINCI+, will measure the composition of Venus' atmosphere to understand how it formed and evolved, as well as determine whether the planet ever had an ocean. The second mission, VERITAS, will map Venus's surface to determine the planet's geologic history and understand why it developed so differently than Earth.

NASA is a critical piece of the administration's efforts to understand and address global climate change. The request supports the continued development of high-priority missions including Plankton, Aerosol, Cloud, ocean Ecosystem (PACE); Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder; and Landsat 9, while also supporting acquisition of Earth Science observation data for commercial SmallSat constellations. In a major step forward for Earth Science, we have initiated a mission concept for NASA's Earth System Observatory, a new architecture for deploying and integrating next-generation spaceborne Earth observation systems. The Observatory includes development of four core strategic missions for launch this decade, and will provide the world an unprecedented understanding of the critical interactions between Earth's atmosphere, land, ocean, and ice processes. These processes define how the changing climate will play out at regional and local levels, and on near- to long-term time scales. The Earth System Observatory

builds on NASA's Earth Science Division's current observations of Earth on a global scale, a fleet of 16 major Earth observatories plus six Earth observation instruments on the ISS, SmallSats, CubeSats, and missions flown by piloted and unpiloted aircraft.

Later this year, NASA will launch the James Webb Space Telescope (Webb), the largest and most complex space science observatory ever built. Webb is an infrared telescope designed to observe the farthest objects, broadening and transforming our understanding of the early universe. It will see the light from the first galaxies that formed in the early universe after the Big Bang, and observe the birth of stellar systems, as well as explore distant worlds and study the atmospheres of planets orbiting other stars—known as exoplanets—searching for chemical fingerprints of habitability. Webb will join a constellation of operating astrophysics observatories including the Hubble Space Telescope, Chandra X-Ray Observatory, and seven other operating missions. The request supports the development of the Nancy Grace Roman Space telescope, designed to unravel the secrets of dark energy and dark matter, and to search for and image exoplanets.

Supporting all of these efforts, NASA is developing new technologies ranging from robotic servicing technology to extend the life of orbiting spacecraft to laser communications for space. Launching this year, the Laser Communications Relay Demonstration will showcase the unique capabilities of optical communications to radically increase the volume of information a signal can carry. In fiscal year 2022, NASA will deliver the Polar Resources Ice Mining Experiment-1 to Intuitive Machines, who will transport this first-of-its-kind, in situ resource utilization demonstration to the Moon. This experiment will robotically sample and analyze ice from below the surface and study the drill cuttings for water and other chemical compounds to help scientists understand the potential of using resources found on the Moon. The Low-Earth Orbit Flight Test of an Inflatable Decelerator will complete fabrication of its flight hardware for an fiscal year 2022 demonstration of space braking technology that will enable a variety of proposed NASA missions to destinations such as Mars, Venus, and Titan, as well as return to Earth. The On-orbit Servicing, Assembly, and Manufacturing-2 project is working toward a late 2022 launch to build, assemble, and deploy its own operational solar arrays in space. NASA is continuing to spur a vibrant space economy through a new Industry and Commerce Innovation opportunity that will invest in technologies needed by commercial space stakeholders.

NASA's aeronautics research will make significant contributions to the national effort to address global climate change, through vehicle technology development and advanced airspace operations, as well as serving as a vital source of innovation for the country's leading export industry, commercial aviation. The request increases funding for planned green aviation initiatives across these programs and supports the continued development of the X–59 Low Boom Flight Demonstrator, as well as early designs of a Sustainable Flight Demonstrator. This year, we will fly the first test flight of the X–57 Maxwell, NASA's first all-electric X-plane—a major step forward in efforts to develop a more sustainable aeronautics industry.

For the first time in many years, NASA's budget request includes funding for its Office of STEM engagement. With a significant increase over recent appropriated funding, the budget request for STEM engagement will increase investment in the Nation's next generation of scientists, engineers, technologists, mathematicians, and explorers.

NASA is uniquely positioned to support administration priorities. The Agency is helping to restore America's global standing, demonstrating the power of a diverse, unified democracy to overcome challenges and achieve great goals. As a source of innovation, and by directly promoting the growth of space and aeronautics industries, NASA plays an important supporting role in creating skilled, high-paying jobs. We are critical to the administration's efforts to expand climate research and investment in innovative sustainable technologies. In addition, NASA is accelerating efforts to further diversity, equity, and inclusion. NASA has long understood that diversity, equity, and inclusion is not simply a matter of justice or fairness, but rather a source of strength and innovation and critical thinking.

CONCLUSION

The fiscal year 2022 request demonstrates the President's commitment to NASA and the people across the Agency and its partners who have worked so hard this past year under the most difficult circumstances and achieved unprecedented success. The NASA workforce and the American people should be encouraged by what they see in this budget request. It is an investment in our future, and it shows confidence in the broad array of benefits this Agency delivers for the Nation.

Madam Chair, I would be pleased to respond to your questions and those of other Members of the subcommittee.

Senator SHAHEEN. Thank you very much, Administrator. As you point out NASA is important not just for research and what that can provide to our other innovative discoveries and commerce. It is also important in terms of the competition where we are no longer the only actor there. We have to ensure that we continue to be competitive.

I want to go back to the issue that I raised in my opening statement that we discussed briefly when we had our phone conversation, which I very much appreciated, and that is the issue of one provider for the human landing system. As we have seen from commercial cargo and commercial crew, having multiple providers can keep the cost of services down and ensure that when a problem comes up with one provider, it does not shut down the whole International Space Station.

What is the best approach for ensuring competition for Lunar Lander Services? Do we ultimately need two demonstration missions? Or can we ensure competition in a sustainable phase?

Mr. NELSON. Yes, ma'am, we do need to. Competition is good, it brings the best cost and the most efficient route, the fact is that before you were kind enough to confirm me in this position NASA had requested $3.4 billion in this current year in order to get this competition going. There were three major competitors. At the end of the day the appropriation was $850 million, approximately $400 million of that was used as the kick start to the initial competition.

Dynetics bid about $8.5, $9 billion, and these were fixed-price contracts, Blue Origin bid about $6 billion, SpaceX bid $3 billion. Before I arrived on the scene, NASA did a Source Selection and the Board decided that they did not have enough money in what was the run-out on the budget, in order to have a sustained and qualified real competition. Although each had their own technical proficiency, and yet, you see where the fixed-price bids had come in. That was the Source Selection Board's decision.

What I would propose to you, Madam Chair, and Senator Moran—Senator Braun, good to see you,—is that you all consider additional monies for ensuring that there is the competition. Now we are in this never-never land right now until August 4 because of the GAO protest. Of course that decision will have a bearing on this, but going forward we are going to have, one way or another, competition for a lot of landings on the Moon over the next decade-and-a-half. In which case, this country boy from Florida thinks that you ought to have competition.

Now, there are many different ways to skin a cat, as you all know. That is, you have got a jobs bill coming along, and there is, in one form, a recommended R&D component in that jobs bill, aside from just straight infrastructure. By the way, in infrastructure NASA has a lot of buildings that are deteriorating. If you have a space center in your various States, they will know, the senators will know about that because of the deteriorating condition.

For example, the big building down in New Orleans that puts together the core of the big rocket, it has holes in the roof, and they need some money to repair that. The jobs bill is a way that you could fund NASA's needs not only for infrastructure, but also for

this additional money to try to give us the competitive proposition over—so that we can then select two landers at least, let them compete, and ultimately have the Source Selection Board decide on one.

Senator SHAHEEN. Well, just so I am clear about what you are saying with respect to this mission. As I understand what you are saying is that there are lots of opportunities for competition in the future. We are going to get a resolution from the GAO at some point this summer, and so for this mission you see only one contractor.

Mr. NELSON. Well, the decision was that for the first demonstration landing, there was only enough money to award one, but we are not going to the Moon to have one demonstration landing with humans. We are talking about utilizing the properties of the Moon to get ready to go to Mars. That is going to require many landings and those need to be competed, now that is if the GAO upholds the NASA Selection Board decision.

Senator SHAHEEN. I understand that.

Mr. NELSON. If they throw it out, then we go back to the beginning and restart it. There, of course, is where we would need resources to do a vigorous competition.

Senator SHAHEEN. Again, just so I understand. In that case what you are suggesting is if the GAO throws out the bid that NASA would be coming back to this subcommittee to request additional funding for competition?

Mr. NELSON. No, because I am requesting that right now, and suggesting that a way to do that is the jobs bill.

Senator SHAHEEN. Okay.

Mr. NELSON. For that additional funding.

Senator SHAHEEN. Unfortunately, this subcommittee will not make the decision on the jobs bill. That would be nice if we could expand our ability to do that, but.

Mr. NELSON. It would be. As a matter of fact, you all may be making that at the 11th hour and the 59th minute.

Senator SHAHEEN. Well thank you. I will turn it over to Senator Moran for his questions at this point.

Senator MORAN. Chair, thank you. I guess I just will try to put a cap on what this conversation has entailed. There is nothing in this budget request, the administration's budget requests that asks for this subcommittee and the Full Appropriations Committee to fund an additional competitor in this process. Is that true?

Mr. NELSON. That is correct. It is a very robust request, but the hard reality is that if we want to do competition on down the line of all the landings that need to get started right now, there is going to need to be more money. I am suggesting that the jobs bill is a way that you could do that.

Senator MORAN. Administrator, I am not trying to create banter here, but you are having to do the same thing we have to do, which is prioritize our spending. Let me ask about the Artemis landing date. I have seen what you have said in public. The budget request does not contradict or propose a different date from the previous 2024 goal, as far as I can tell. I know that these ambitious goals and timelines often spur motivation as well as provide a mechanism to incite decisiveness in decisionmaking.

The calendar says 2021, and there is a lot still to be done in order to land our astronauts on the Moon. If NASA receives exactly the budget that is being requested for Artemis from—in the appropriations process, when do you believe we will land astronauts, that first woman, that first person of color, on the Moon?

Mr. NELSON. I wish I could give you a precise answer; the fact is that 2024 is the goal. Space is hard. If you look at the history of development of spacecraft and rockets, you often run into situations in which—in fact, there is some unknown that occurs and you see delays. We have to be soberly realistic about this, but the goal is 2024.

Senator MORAN. The budget that you are requesting meets that goal? Assuming that the assumptions that are made today, that your budget would meet that goal of 2024.

Mr. NELSON. Unless you want competition. I have suggested a way in which to do that. Senator, may I add one other complicating factor?

Senator MORAN. Please.

Mr. NELSON. I think—this is my personal opinion—that I think you are going to see a very aggressive China. You are going to see a Chinese Government that understands all the value of the success in space. We have already seen how they are glowing in the afterglow of their landing on Mars with a rover. I think you are going to see an aggressive program of them landing on the Moon. I am stating what is out there already in the press.

I think that is going to become a question for you all as policymakers. What is the value to the United States that we get back to the Moon first, and get on with this program in preparation to go to Mars?

Senator MORAN. What transpired with the landing by China on the Moon, did it change any calculations as to what we are doing at NASA, or formulate any additional ideas about technology?

Mr. NELSON. It certainly has my attention. I have suggested to you, and landing on Mars is no small feat, which they did.

Senator MORAN. Yes, I misspoke. Thank you for correcting me.

Mr. NELSON. I think you are seeing statements being made by the Chinese Government that they don't want to wait around until the 2030s to land on the Moon with humans; and tomorrow, as I mentioned, in this global conference in St. Petersburg, Russia, we are expecting a statement being made jointly by China and Russia as to what their plans are. Let us see what that is.

Senator MORAN. You and I had a conversation just briefly before this hearing started. I was highlighting for you something that I was pleased to know that you already knew. Last December, the Kansas Department of Transportation and the Federal Aviation Administration finalized an agreement to establish the Kansas SuperSonic Transportation Corridor for use in testing non-military aircraft that fly faster than the speed of sound.

As the first and only such commercial SuperSonic flight test route in the Nation, in our Interior, we would welcome NASA to utilize the 770 nautical-mile-long corridor within our State to further NASA's SuperSonic efforts. NASA moves forward in their X–59 testing, can I assume that you will keep me and my staff updated on the selection of flight paths for that X–59 and ask you

that this opportunity that Kansas has helped to create, be utilized by NASA?

Mr. NELSON. Of course. Senator, Kansas is to be commended that they are forward-thinking enough to realize that there is the advance of technology. As we are developing this X–59 so that you could fly SuperSonic and do it over land, as well as over the ocean, what you all are saying is, you want that SuperSonic aircraft to say: Boom, over that corridor that you have created.

What this research is, is to develop that SuperSonic aircraft, that does not go the big boom when it breaks the sound barrier, but that it is a much more muffled sound that does not become a problem in flying SuperSonic over populated areas.

Senator MORAN. Mr. Administrator, thank you and just ask you to allow me the opportunity to highlight for you that capability, in Kansas, for the X–59 testing.

Thank you, Chairwoman.

Senator SHAHEEN. Thank you, Senator Moran.

Senator Kennedy.

Senator KENNEDY. Thank you, Madam Chair.

Mr. Administrator, congratulations.

Mr. NELSON. Thank you, Senator.

Senator KENNEDY. I think the President has chosen well, and I am so pleased that we will get to continue to work together and I mean that, Bill.

Mr. NELSON. Well, it is my privilege.

Senator KENNEDY. Your budget, your budget request includes $390 million for, "Construction and environmental compliance and restoration". Now we need, as you probably know, about $174 million to restore and repair Michoud and Stennis. Is that included in your budget request?

Mr. NELSON. Well, it is going to be, if you will help us.

Senator KENNEDY. We will help you.

Mr. NELSON. Senator, before you came in, I have already named Michoud.

Senator KENNEDY. That is what "Bubba" was telling me.

Mr. NELSON. Pointed out, there are holes in that roof where we are putting together the first core, the first stage of the rocket before it is shipped to the Stennis Space Center, where then the engines are tested with the live fire and not only at Michoud and at Stennis, but every NASA center, 10 of them, and 10 facilities, and there is crumbling infrastructure, and we desperately need it.

I will tell you, one of the things you could do with this infrastructure bill coming along, we can only squeeze out so much in the President's budget, but you have a wonderful opportunity, as conservative estimate, NASA needs about $5 billion to address its infrastructure needs.

The chairman of the—the Ranking Member of the full committee, Senator Shelby has pointed out to me on a number of occasions that he has an administration building, a headquarters building at his Center, Marshall Space Flight Center, that has to be torn down.

Senator KENNEDY. Yes.

Mr. NELSON. It is just in terrific disrepair. We really have these infrastructure needs.

Senator KENNEDY. Let me ask you. Let me switch gears here slightly. The SLS heavy-lift rocket, as you know, is being built for Artemis missions so our astronauts can return to the Moon, beyond the planned Artemis crew missions, what will be the role for SLS in the next decade as you see it? Can it be used, or will it be used for cargo-only missions in support of staying on the Moon, or our journey to Mars? Or will we use it to launch scientific missions? What are your thoughts?

Mr. NELSON. All of the above, Senator. The first three missions are with regard to—and by the way—I wish, Madam Chair, that you all might consider doing a CoDel at the end of the year to come down for the launch of the most powerful rocket in the world. The Space Launch System, SLS, with its spacecraft on the top called Orion, and it will——

Senator KENNEDY. That is a great idea, great idea, Administrator.

Mr. NELSON [continuing]. It will launch uncrewed. It will go way out beyond the Moon, come back, the capsule will land in the ocean. If all goes well, then within 2 years we will have the first crew. This is Artemis II, to go out beyond the Moon, maybe do a cislunar orbit, and then come back.

Artemis III, which is the one, Madam Chair, that we are—the goal is 2024. Then it goes and rendezvous in lunar orbit with the winner of the competition for the first demonstration landing, the lander takes the crew down to the surface. They do their activities, come back, marry up with Orion and bring the crew home safely.

Then Artemis IV, and you had asked about that as did the chair, Artemis IV has an enhanced upper stage because now it has a bigger load, not only the spacecraft on top, but the first component of the so-called space station that will go in lunar orbit called the Gateway, which will be built with our international partners, and will serve as a way station as we build and develop the technologies to go to Mars.

Senator KENNEDY. Wow. Well, I am out of time, but let me say it again, Mr. Administrator, I am very grateful you are willing to continue to share your good judgment, and your experience, and your expertise with the American people. I am so pleased we will continue to work together. Thank you for giving so much.

Mr. NELSON. Bless you. Thank you.

Senator KENNEDY. Thank you, Madam Chair.

Senator SHAHEEN. Thank you, Senator Kennedy.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Madam Chairwoman, Ranking Member Moran.

Mr. Administrator, it is great to see you. Look forward to working with you on the important mission that you have before you. You know well that your own State of Florida is a major center for space activities and exploration. I know you also know that Maryland has a major footprint when it comes to space, including the Goddard Space Flight Center, including, APL, the Applied Physics Laboratory and their Hopkins Space Center Institute—Space Telescope Institute. Wallops, which is not physically located in Maryland, but majority of the great people who work there live and work in Maryland.

I just want to, again, renew the invitation from Senator Cardin and myself. To come with us to visit Goddard, as well as Wallops. Are you still up for that?

Mr. NELSON. I am expecting to be at Goddard in the next two weeks, and it is my understanding that the Vice President wants to go and wants me to tag along. I think that would be a great time for you and Ben Cardin to come as well.

Senator VAN HOLLEN. I appreciate that. We will definitely follow up with you on that. Thank you, Mr. Administrator. In the prior administration we had a challenge getting them to budget for important missions related to space, fortunately, this scientific subcommittee on a bipartisan basis recognized the importance of those missions.

I am pleased to see that the Biden administration budget, your budget includes funding for PACE, for OSAM–1, for Europa Clipper, so grateful that that is included already in the budget. I mentioned the Wallops Flight Center, and that is a center that is critical to our space and Earth Science missions, it is a hub for unmanned flight. It is a supplier to the International Space Station, and it is home to NASA's Balloon Program.

One item missing from the budget that was submitted by the administration is the 21st Century Launch Complex Program. We will be working again on a bipartisan basis, I hope, to make sure that we fund that important program. I understand that you intend to request a $5.4 billion for infrastructure in support of upgrading NASA's facilities. I think I may have overheard some of the conversation. Is that part of the annual appropriations; or you said that is part of the American Jobs Plan?

Mr. NELSON. That is the jobs bill.

Senator VAN HOLLEN. All right. Well, let me just say Goddard and Wallops both have a number of shovel-ready projects, including when it comes to Wallops, something called the Wallops Island Causeway Bridge, it is the single access point to the Wallops Complex, and it is 60 years old and overdue for replacement. Could you agree that we will continue to work together to make those investments as well as investments through the 21st Century Launch Program?

Mr. NELSON. As a matter of fact, Senator, your bridge is number one on the list and, absolutely. Of course the President proposes that you dispose, and so this is a partnership, and as I had said to the chair, there are more ways to skin a cat than one. The jobs bill is an opportunity, not only for infrastructure but for R&D as well, which is desperately needed if we are going to have the competition for the human lander that we have been talking about previously in this hearing.

Senator VAN HOLLEN. Appreciate that. As you know, and I know you agree that we are strongest when we put all of our talent on the playing field and that is of course true in the area of STEM, and Maryland has a number of terrific HBCUs and MSIs that are leaders in this area. Morgan State is among the top four colleges in the country, graduating Black engineers. It is one of 11 HBCUs that has an R2 Doctoral Research University status.

Bowie State is the first university to receive a satellite collaboration with NASA, and University of Maryland, Baltimore County,

has recently been awarded an extended support by NASA for its Center for Research and Exploration in Space Science and Technology. Look forward to working with you on that. I think, Mr. Administrator, this is a priority of yours in terms of making sure that all of these universities are part of the NASA's efforts to strengthen STEM. Is that right?

Mr. NELSON. Yes, sir. The President's budget is very robust in STEM. It is a significant increase. By the way, this has a relationship to each of your States because the Space Grant goes into every State. For example, Minority University Research and Education Projects are another way to enable a greater opportunity to reach out to minority students.

I think you just look at: What are we confronting? Okay, go back 50 years ago. We were going to the Moon. It was the great space race with the Soviet Union. We did this tremendous successful feat of landing humans on the Moon and returning. What did that do to education, in science, and technology, and engineering, and mathematics? For a whole two generations that excitement about space flight rippled through those generations. We saw the effect of that on our country, the economic renaissance that occurred as a result of the increased technology that had come out of that more highly STEM-educated workforce.

I believe that is what is going to happen here, as we go back to the Moon and on to Mars, I think it is going to excite another couple of generations of students. As a result, we, the United States, as well as Planet Earth, are going to be the beneficiaries.

Senator VAN HOLLEN. Thank you, Mr. Administrator.

Senator SHAHEEN. Thank you.

Senator Boozman.

Senator BOOZMAN. Thank you, Madam Chair.

It is good to see you, very much. I want to publicly thank you, Administrator Nelson, for your decision to continue to serve the country and in a field that we all know you have a great passion for. Your experience as an astronaut and legislator makes you an ideal advocate for NASA's priorities. I know you will do a great job, I know you will do an excellent job, and look forward to supporting you in any way that we can, as you lead NASA into the future of space exploration and scientific research. Again, congratulations, very, very much.

The President's budget request includes NASA funding for its Office of STEM Engagement, important funding like this helps organizations like Arkansas' Space Grant Consortium, educate undergraduate and graduate students on aerospace science and research. This program also inspires K through 12 students in STEM-related fields. I know from your time on The Hill, you championed funding in STEM education. What is your plan for the Office of STEM Engagement? Will you continue to support organizations like Arkansas Space Grant Consortium?

Mr. NELSON. Senator, you said it as good as I can say it. Every State gets a space grant, and STEM grants are often distributed through universities. There is an emphasis also on minority outreach universities as well, as well as the HBCUs. There is a robust budget that is proposed in this budget. It is $147 million. I might point out that over the past few years there were attempts to zero

that out, but you all always restored the STEM budget, I thank you for that.

This particular budget has a $20 million plus-up, I hope that you all will consider this recommendation and I would like to come to your State, and I would like——

Senator BOOZMAN. We would love to have you.

Mr. NELSON [continuing]. To visit one of your universities and to talk about the STEM grant that goes to that university.

Senator BOOZMAN. Very good. Thank you very much. The International Space Station is responsible for some of the most groundbreaking scientific research and technology breakthroughs in the last few decades. Currently the U.S. will cease operations with the International Space Station in 2024. You have pushed to extend that authorization until 2030 so the Commercial Space Station could replace it. Can you briefly discuss how this plan ensures that NASA will maintain a continuous human presence in low-Earth orbit? Also, how will NASA work with these commercial partners to continue its great scientific research?

Mr. NELSON. Thank you, Senator. Several years ago when Ted Cruz and I were leading the Space Subcommittee of the Commerce Committee, we proposed that the date of 2024 be extended to 2030 for exactly the reasons that you just articulated. That passed the Senate last year. It did not pass the House at that time. However, the Commerce Committee has just come forth last week with a NASA Authorization Bill, it was part of that pioneer bill, and it has an extension of the International Space Station to 2030.

Now it might be of interest to you because you have seen some commentary in the news about the Russian Space Program saying, well, they are not sure that they are going to stay around after 2024. Let me remind you that they are just about to launch another major component of the space station. If those press speculations were true, I don't think we would see that, but I bring to you two conversations with Dmitry Rogozin as of this morning when I participated in this panel of global space organizations that is being held in St. Petersburg, Russia, and he was very bullish about cooperation.

I would just, in passing, point out that no less in Keir Simmons' NBC interview of Putin in the last few days, Putin actually, President Putin actually talked very favorably about the cooperation with U.S. in space.

Senator BOOZMAN. Very good. Thank you. Thank you, Madam Chair. Again, congratulations.

Senator SHAHEEN. Thank you, Senator Boozman. We are going to keep the Administrator very busy because he is now committed to go to New Hampshire, Kansas, Maryland, and Arkansas.

Mr. NELSON. All 50 States, Madam Chair.

Senator SHAHEEN. Good.

Senator Manchin.

Senator MANCHIN. Thank you, Madam Chairwoman.

Administrator Nelson, so good to have you sitting there, and the position you are in, and we are feeling a lot better. I can tell you that.

Every NASA mission relies on a team of scientists and engineers to design, manufacture, and verify that these spacecraft can indeed

reach their intended target. You cannot just point a rocket at the sky and light the fuse. You have to verify that your trajectory reaches its destination and validate through complex calculations that it will work. In the 1960s those were done by hand, and for our most important flights, it was Katherine Johnson, a West Virginia Native that did them.

Today we use software to make those calculations. The NASA's Independent Verification and Validation Facility in Fairmont, West Virginia, bears her name and proudly carries her tradition, by ensuring that this software is safe, reliable, and can be trusted to ensure our missions are completed, and get home safely. Safety costs money as you know, and the IV&Vs budget has been flat for over a decade, flat for over a decade.

To address gaps in funding in the past few years, NASA has required its mission directorates to pay a portion of IV&V's funding. That is just a kind of an if-and-and situation. I think the most logical solution is to increase the IV&V's budget so that NASA's mission, their directorates are not forced between their budgets and safety. Everybody is robbing Peter to pay Paul. I didn't know if it was on your radar screen. If you could look into that, try to be considerate and help us on that, sir.

Mr. NELSON. I will certainly look into that, Senator. If I might, tell you a story——

Senator MANCHIN. Okay.

Mr. NELSON [continuing]. About Katherine Johnson; if you all happen to see the movie "Hidden Figures".

Senator MANCHIN. That was the greatest.

Mr. NELSON. It is an exact true story about how John Glenn, the first to climb into that Atlas rocket that had a 20 percent chance of failure, and it was the first time that they were using a computer on the trajectory. He did not want to rely on that. He wanted——

Senator MANCHIN. A back up?

Mr. NELSON [continuing]. A back up of Katherine Johnson to make her mathematical calculations by hand, to verify. That tradition, that legacy has now extended to what is in your State of West Virginia, the independent verification.

Senator MANCHIN. Well, if you could help us on that, just so they have their independent funding, because they are relying on other sources just to survive.

Mr. NELSON. Let's go visit that together.

Senator MANCHIN. Okay. You are not that far. I can take you and, you and your lovely bride, and we will go enjoy a nice week.

Mr. NELSON. Are you flying the airplane?

Senator MANCHIN. I can if you want me to.

Mr. NELSON. I had better check.

Senator CAPITO. I would be careful about that. I am not sure we want that.

Senator MANCHIN. In 2018 I was honored to—as you talk about Ms. Johnson—in 2018, Administrator, I was honored and had the privilege to meet Katherine Johnson and her family before her passing during a dedication ceremony for a statue of Ms. Johnson at West Virginia State University. It is a historically Black univer-

sity in Charleston, West Virginia. That was her alma mater, she went there when she was 14.

It is my hope that the students who pass by the statue every day are going to be reminded of her legacy and inspired to keep their passion for knowledge alive. After her passing last year, at 101, I led my colleagues in unanimously passing a resolution honoring the life and achievements of Katherine Johnson. That represents the very best of us breaking down the barriers of race, gender, ensuring safety of astronauts on countless missions during her decades, which you just mentioned, one of the most famous, John Glenn.

Unfortunately, NASA today is still underrepresented by women of color, particularly in its most senior levels. I would ask how many Katherine Johnsons have we missed over the years? How many young women, people of color and others, from rural areas like West Virginia, could we have brought hidden figures like Katherine into the limelight?

I know you are just coming on, and putting your staff together, and all of your ideas that you want to accomplish. I guess I would ask: What is NASA intending to, or doing to continue to encourage diversity, not just in NASA itself, but the STEM education of young children and students around the country?

Mr. NELSON. This is very important to the President. It is very important to me. When I participated in the Space Shuttle Program, we saw the first effort, by the way, by an African-American woman to help NASA bring diversity into the Astronaut Corps. It was in the Class of '78, first Space Shuttle astronaut class. The lady who played Lieutenant Uhura on Star Trek, the original Star Trek television series, Nichelle Nichols, after she had been an actress, she was approached by NASA to go out and recruit minority candidates and women.

That is reflected in that first astronaut class, where it had—the astronauts basically had been test pilots, all White males before, and qualified women and qualified minorities did not even know that they would have a chance. They would not apply. She was successful in doing that. We see the results all throughout the Astronaut Corps.

A lot of this goes back to STEM. You have got to provide in all communities, Science, Technology, Engineering, and Mathematics education. In your universities, you will have Space Grants, Senator, in West Virginia, and they come directly out of this program.

Senator MANCHIN. We are going to reach out to you with that, and where we have WVU, and other universities there that have some—a little bit of activity there. I think it can be a lot more too. But look forward to working with you. I am so glad that you are settled back in, and back on The Hill with us. Thank you, sir.

Mr. NELSON. Thank you.

Senator MANCHIN. Thank you, Senator.

Senator SHAHEEN. Thank you, Senator Manchin. We will do another round at least one more round, maybe two, for those people who want to stay. I would like to go back to climate science, Mr. Administrator, because as you know NASA is the biggest funder of climate science, and the government, but of course it is not the only one. NOAA, Energy, EPA, there are many other agencies that ad-

dress the climate crisis. One of the challenges is how those agencies all work together to address climate, the research and what we can do to respond, can you talk to NASA's role in climate science, and how you see NASA working with those other agencies?

Mr. NELSON. Senator, you have put your finger on the fact that people do not realize how inextricably entwined NASA is on all matters having to do with climate. You initially think of it as NOAA, the National Weather Service, which is a part of NOAA, the fact is that the spacecraft are designed, they are built, they are launched by NASA, and NOAA operates the spacecraft, looking for all the subtle changes, differences, weather reports, et cetera.

You would be perhaps surprised to learn that two-thirds of NOAA's budget is paid to NASA, two-thirds of its total budget because of this uniqueness of us building and launching these spacecraft. The assets that are up there on orbit that have so helped us refine our weather reports, our predictions of disasters, of warning people to get out of the way of storms, of telling them about droughts, of telling them about floods, that is all there. But we are taking it to another level.

For over the next 10 years, this was the President's announcement about two weeks ago in the press conference that occurred at FEMA, at the onslaught of the hurricane season, NASA is building five great observatories. Over this decade, they are going to be put up, and they all talk to each other, and they produce a 3D result by getting very, meticulous data from the land, the sea, the ice, and the atmosphere, and all of that is correlated to give us a 3D composite of what is happening to our atmosphere.

When I say that word, I suddenly, in my mind's eye, flash back to floating in front of that spacecraft window, looking at the rim of the Earth and seeing that thin little film, which is the atmosphere that sustains all of life. That is what we want to know what is happening so that we can take corrective action.

Senator SHAHEEN. I mentioned the fact that the University of New Hampshire is one of the leading research institutions with respect to heliophysics, which we know has a real impact on our weather patterns and what happens on Earth. Obviously continuing to support heliophysics is going to be very important as we are looking at climate science.

Again, how does NASA plan to support future investments in space weather, and including that heliophysics and how does NASA interact with NOAA? You pointed out the really symbiotic relationship between NASA and NOAA, but do they share all that information when you talk about getting that picture of what is happening on Earth with respect to climate? Is that shared with NOAA with all the other agencies that are also doing climate research?

Mr. NELSON. Yes, ma'am, and that is enhanced with a special—I don't know what it is called—but in effect a committee in the White House that makes sure that all of these environmental agencies that have data are sharing it with each other so that we know more precisely exactly what is happening to the planet.

That, for example, that we can warn farmers that a drought is coming, or that we have got the ability to look down with these highly-sensitive instruments from space that can tell that farmer that there is a disease in the crop, or to look at that forest and say

that there is a disease in that forest that, otherwise, we earthlings might not have known, but which was caught on the instruments in space.

Yes, ma'am, that coordination is occurring. Our former colleague, John Kerry, is more involved in the international aspects of looking at that, but there is this attempt to coordinate all the agencies that do that. Of course, NASA is a main component of it because of what I just mentioned, even though people don't realize that. You think of NASA as space.

Senator SHAHEEN. Thank you.

Senator Capito.

Senator CAPITO. Thank you, Madam Chair.

It is good to see you. I am sorry. I missed your confirmation hearing. I hope it was not too tough on you there. I think you kind of breezed through that one pretty, pretty well, but it is nice to see you.

Mr. NELSON. I was fortunate.

Senator CAPITO. I am pleased to see that what was formerly the Restore-L which is the OSAM–1, which is the funding level for $227 million in the budget request, there is great work being done in my home State, in West Virginia, at the West Virginia Robotic Technology Center. This is where you are working on restoring satellites in space, instead of just letting them, you know, drift off. It makes a whole lot of sense. I don't know if you can elaborate on that, and how that is going and why you feel that is a high priority for NASA?

Mr. NELSON. Yes, ma'am. When you put up a highly-sophisticated instrument, and it has a glitch, or say it starts running out of fuel, and here is this multi-million dollar spacecraft, we are now developing the technology that you can send out, basically, what the Hubble Rescue Mission did with astronauts to repair the Hubble defective lens, in this case to go robotically to the spacecraft that needs this mechanical fix, this additional gas in order to have the fuel that it needs to continue its life, or whatever repair is there. That is being done.

The sophistication of spacecraft that can do this at a point way up there on orbit and you can rendezvous robotically, and fix that spacecraft. And that is what the project is that you are speaking about.

Senator CAPITO. Right. As I said, some of that work is being done in West Virginia, and you read in the paper quite a bit, and it seems like more and more, that space debris is becoming a problem. I am sure with the OSAM–1, obviously since you can repair in space and elongate the life of a satellite, or something, obviously could help address some of that issue. I just want you to comment on that.

Mr. NELSON. Yes ma'am. In this budget of the President, there is $227 million there for this project.

Senator CAPITO. Right. I know Senator Manchin mentioned the IV&V Center in our State as well. We are very proud of the workforce there. They do a lot of internships with West Virginia University and Fairmont State. I think they still have capacity there to help across, really, all parts of government to do the verification that they do.

I would just encourage the emphasis that you all at NASA put on that facility to increase the footprint, and utilize the workforce there. Because I mean, it is not like they are not—they have got plenty to do, but they have some more capacity, I think, where they could do more. Keep that——

Mr. NELSON. Yes, ma'am. I said to him that I hope the two of you will invite me to come. I would like to go with you. I want to see it.

Senator CAPITO. Yes.

Mr. NELSON. Then I told him a story about Katherine Johnson.

Senator CAPITO. She was an amazing, amazing woman. Which brings me to my last thing I wanted to ask you, we had Peggy Whitson who was a very famous female—is a very famous female astronaut who, interestingly, is going be the pilot for one of the private ventures into space. I saw her name listed, and she was such an—I took her to classrooms—and such an inspiration to our youngest generation of particularly young women, girls. That's when she told the story that she became inspired by seeing somebody walk on the Moon when she was in second grade; that is when she decided she wanted to try to be an astronaut.

We have also—did a remote with a female astronaut who was actually American who was in Russia at the time. I think I told you this on the phone. There again, to that next generation of dreamers and aspirational young women, is this a big area of influence for NASA in terms of trying to diversify the workforce in a lot of different ways? I am specifically asking about women. I know there is going to be one going to the Moon. I am excited about that.

Mr. NELSON. Absolutely. I go back in my history, I have already recounted for the subcommittee that the first real breakthrough on astronauts in diversifying was the class of 1978, the first Space Shuttle group of astronauts. A lot of it came from NASA having a contract with a former actress who played Lieutenant Uhura on Star Trek.

Senator CAPITO. Oh, yes.

Mr. NELSON. She went out and recruited women and minorities. That was quite a diverse class that broke the mould of the test pilot who could only be so high, and had to weigh so much, in those early space days. Now we have a very diverse Astronaut Corps. Same with the employees at NASA, we are being very mindful to diversify. This I believe is directed for the entire executive branch of government. I take it very, very seriously, as I did as Senator. We had—I think we had a percentage of more women in my Senate staff than only one other Senator. I take this very seriously.

Senator CAPITO. Thank you. Thank you for being here with us today. Thank you.

Mr. NELSON. Yes, ma'am.

Senator SHAHEEN. Thank you, Senator Capito.

Senator Moran.

Senator MORAN. Chairwoman, thank you very much.

Mr. Administrator, two tracks I think they are out there when it comes to the Moon. The first is to get to the Moon and demonstrate that it can be done safely. Then the second is to plan and be prepared for a sustained presence, or reoccurring presence, perhaps, on the Moon. I understand NASA is preparing, and engaged

in a sustainability study. What can you tell me about that? Can we expect to be briefed on what that is? Does anything that comes from that sustainability study change any of the appropriations requests for this fiscal year, the one we are talking about?

Mr. NELSON. At the moment, no. However, everything is on hold until the GAO makes their announcement on the competition for the first demonstration lander. Shortly thereafter, we will produce the sustainability study. In part, that will lay out for you what is the realistic cost as we are going forward with all of these landers that we are going to be doing on the Moon in preparation for the Mars mission. The activity is on the Moon as well.

It will demonstrate, what is it going to take to sustain this for us to be serious about going to Mars. Now, presently our technology to go to Mars is that it is going to take 10 months or so to get there under conventional propulsion or even nuclear electric propulsion that we are starting to research. Once you get there, you are going to have to stay on the surface for at least a year, if not 2 years, because of the alignment of the planets, so that Mars and Earth get closer so that you can get back within that timeframe.

If we had a breakthrough propulsion technology that we could sprint to Mars and get there, as some of the research being done, in 39 days, then you could be on the surface for a few weeks and then return. That technology has not been developed yet. These are the kinds of things: How are we going to protect astronauts from getting fried by a solar explosion. Earlier, one of the senators had mentioned about—well you, Madam Chair—heliosphere, that is this study of the Sun.

Of course one of the things that we had to be concerned about is a nuclear explosion on the Sun, which is a solar explosion, and it sends out all of this radiation going all over space. If you don't have your astronauts protected then you can imagine. As a matter of fact, we just missed it on the Moon back in Apollo, a few weeks after we had landed on one of the missions there was a solar explosion, and there would have been some irradiated astronauts had we been exposed.

When we are thinking about a long trip to Mars, or when we are thinking about having some kind of habitat on the Moon in preparation to learn about having a habitat on Mars, then that is another technology that we are going to have to create. We know lead does it, we know water does it, but those things are heavy. We are trying for a breakthrough. This is just another example of some of the technologies that we are going to have to develop as we venture further out into the cosmos.

Senator MORAN. Senator—Administrator, you highlight or point out that the trip to the Moon is certainly more than a trip to the Moon. It is related to future space exploration, at the moment generally focused on Mars. I mean, I would encourage, we want to make sure that our visit to the Moon is not just a visit, it is not just a planting a flag, or the bragging rights, that it lends itself to more on the Moon, on Mars and beyond.

I assume that takes a balancing act in trying to figure out what it is we do today in preparation for tomorrow. And you have de-

scribed that. Is there anything else I should know about that, or——?

Mr. NELSON. The reason we want to use the Moon in preparation to go to Mars, is that the Moon is 3 days away, and Mars is months and months away. We can use the properties of an airless vacuum on the Moon with one-sixth gravity in preparation for long-duration space flight and habitation on the surface of Mars, one-third gravity.

It is going to get—it is going to get very technically complicated to do that. I look forward to getting educated on it, and bring some of those smart people to this subcommittee to tell you about what all we are going to have to do. In a spacecraft, for example, if it took us 10 months to Mars, and suddenly they land and they are in one-third gravity, what is that long trip in zero gravity? Can we start some kind of cylindrical spacecraft that will rotate with centrifugal force that would create an artificial gravity that would make that long duration space flight more palatable?

We are seeing what long-duration space flight does in the Space Station. It is one of the reasons for having the Space Station right now in low-Earth orbit. See what that does to the human body.

Senator MORAN. I appreciate your suggestion of bringing those scientists and experts, not intending to speak for the chair, but I think we would both be very interested in that kind of opportunity. My final, concluding question—my concluding question, James Webb Telescope, are we behind—are the challenges that have delayed us for so long, seemingly behind us?

Mr. NELSON. I certainly hope so, and I believe so. The most recent report that you have heard that there is a delay this is very minor, and it has nothing to do with the spacecraft or the rocket. It has to do with the preparation of the rocket by the Ariane folks, and it is the Ariane rocket, because they have only got one vehicle assembly building, and they have got two Ariane rocket launchings before the Telescope launching.

It has only been moved from October 31, two weeks later, to the middle of November. That is another Co-Del that you all may want to consider going to.

Senator MORAN. What is the launch date?

Mr. NELSON. This November.

Senator MORAN. November?

Mr. NELSON. This November. By the way, once that is up there, this will just blow your mind. The universe is 13.5 billion years old. This telescope is going to look back in time to the first 150 million years since the big bang and capture the light from that time. In other words, it is going to look back in time, 13.35 billion years. What it is going to show us is: What did it look like? What was the composition at the very formation of the first galaxies?

That is going to be revolutionary what we find out about astrophysics and astronomy. You know that we are picking up exoplanets already with the Hubble Space Telescope. We are seeing conditions around other—Sun, stars, where they have planets that revolve about them. It is thought that we are discovering other worlds that could be like our own. As we explore our own solar system, we are going to Venus, and we are going to see why does that

have such a thick prohibitive atmosphere that heats it up so that it will melt lead on the surface.

It is: Sun, Mercury, Venus, Earth, a habitable planet, then Mars an uninhabitable planet that has a very thin atmosphere, 1 percent of Earth's atmosphere. Why is that like that? Are there elements in Venus and Mars that in these billions of years of development of what we know as our solar system, that there might have been the elements of life there that will give us the clues about all of these other solar systems in these other galaxies. It is going to be an exciting time. That is what the Webb Telescope is going to do for us.

Senator MORAN. Administrator, thank you for your brevity. Yes, thank you for your smile. I saw the Perseverance landing at the Jet Propulsion Laboratory, and at that point in time also visited the Webb, James Webb Telescope just before it was folded up and ready to be moved for transport. It is an exciting circumstance and a great opportunity for knowledge and practicality.

Chairwoman, thank you. Thank you, Mr. Administrator.

Senator SHAHEEN. Well, thank you very much. I have just one more area that I would like to pursue. Mr. Administrator, the direction of this subcommittee, as I am sure you are aware, the GAO, the Government Accountability Office, analyzes the cost and schedule performance of major NASA projects, anything more than—costs more than $250 million, and they found that for the fifth year in a row, both costs and schedule deteriorated. While I know that COVID contributed in the last year, the decline over those 5 years cannot be attributed to COVID alone. Can you tell us what you are doing to improve project management, particularly in those high-risk, high-cost projects?

Mr. NELSON. Yes, ma'am. Think back to what I said, space is hard, and when you develop very sophisticated things often you get delays, and if it is not a fixed-price contract, like we made the landing on the Moon with humans, that is fixed price, and you often get these cost overruns. I am committed to continue to try to improve NASA's acquisition management discipline. I think there is a lot still to be done on that.

Senator SHAHEEN. Clearly.

Mr. NELSON. I am going to try. GAO has recognized that NASA has made significant progress in their latest 2021 iteration of their high risk—in their high-risk report, and specifically NASA was credited for improvement in two of five criteria areas; leadership commitment, and monitoring, that GAO considers as they determine NASA's future standing on their high-risk report. But, you know, more has to be done.

Senator SHAHEEN. Thank you. I appreciate your commitment to addressing this. I guess my final question is: Do you think that 2024 is a realistic date for a return to the Moon?

Mr. NELSON. It is our goal. Space is hard, as I just said. When you are pressing the edge of the envelope often you get delays and you get technical things that happen that you did not anticipate. The goal is still 2024.

Senator SHAHEEN. I will take that as a maybe.

Mr. NELSON. Yes, ma'am.

ADDITIONAL COMMITTEE QUESTIONS

Senator SHAHEEN. Well, thank you very much for your testimony this afternoon. If there are no further questions, senators have until June 22 to submit additional questions for the record, and we expect and request that NASA would respond to those questions within 30 days.

[The following questions were not asked at the hearing, but were submitted to the National Aeronautics and Space Administration for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. BILL NELSON

QUESTIONS SUBMITTED BY SENATOR JOE MANCHIN, III

A REVIEW OF THE FISCAL YEAR 2022 BUDGET REQUEST FOR THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Question 1. Located just down the road from the Katherine Johnson IV&V Facility, the West Virginia Robotics Technology Center (WVRTC) has been the lead academic partner for NASA's Restore-L satellite servicing mission since 2009.

Two years ago, NASA made the decision to combine the Restore-L satellite servicing mission with the Space Infrastructure Dexterous Robot (SPIDER), which will demonstrate manufacturing and assembly of a communications antenna in space. Both of these programs will be launched onboard the On-Orbit Servicing, Assembly, and Manufacturing 1 (OSAM–1) spacecraft.

I applaud NASA and its industry partners like Maxar for thinking outside the box to achieve cost-savings and ensure these critical programs move forward.

A. Can you tell me how that program is progressing?

Answer. In fiscal year 2021, OSAM–1 continued the development of the spacecraft bus and completed the spacecraft propulsion module integration. Seven subsystem critical design reviews were successfully conducted. The SPIDER payload held its Critical Design Review in February 2021 and initiated payload and integration activities. The project also completed construction of the Mission Operations Center at Goddard Space Flight Center (GSFC). Psionic LLC was awarded a non-exclusive, commercial license for the OSAM–1 Kodiak Lidar to enhance their capabilities for precision navigation.

OSAM–1 successfully completed an integrated flight demonstration mission Critical Design Review in February 2022 and the Servicing Payload integration will commence. The spacecraft mechanical and electrical integration is in progress and the spacecraft bus and the SPIDER pallet will be integrated in fiscal year 2022. OSAM–1 will continue to leverage Technology Transfer mechanisms and pursue partnerships with interested U.S. companies through Space Act Agreements to transfer knowledge and capabilities to industry.

B. Is the current budget of $227 million sufficient to keep the launch on track?

Answer. The $227 million requested in NASA's budget is sufficient for fiscal year 2022. Due to COVID–19, the project has been experiencing cost, technical and schedule issues, forcing the project to replan. The project recently completed its replan efforts to incorporate COVID–19 impacts. A breach notification was sent to Congress on February 14, 2022.

Question 2. Programs like NASA's Established Program to Stimulate Competitive Research, known as EPSCoR, are critically important for building research capacity in my state. EPSCoR in particular is aimed at increasing research capacity in States that have traditionally received lower amounts of research funding from the Federal Government. As someone from an EPSCoR State, you understand the value of this program in ensuring that States like West Virginia get continued research infrastructure funding so that they can make meaningful contributions to NASA moving forward.

In West Virginia, NASA funding allowed students and researchers to continue with various research projects in the areas of advanced materials and robotics.

A. Do you believe that sustained funding for programs like NASA EPSCoR will be sufficient for the growing demands for STEM?

Answer. EPSCoR is one of many government-funded programs that are supporting STEM. Specific to West Virginia, the state continues to be a recipient of EPSCoR funds. The WV EPSCoR site is located at West Virginia University. OSTEM/EPSCoR currently has an investment of $4,949,997 in active research awards in West Virginia. This year (fiscal year 2022) West Virginia has participated in the Research Infrastructure Development (RID) solicitation resulting in a $1,000,000 award with a 5-year period of performance, and thus far they submitted two proposals to the Rapid Response Research solicitation (currently in review).

Question 3. West Virginia isn't just helping validate the software and design the robotics for our space programs, West Virginia manufacturers are also key suppliers for the Artemis program's return to the Moon.

For example, the Constellium plant in Ravenswood, West Virginia provides the aluminum plating and material for Boeing's Space Launch System (SLS), ULA's Vulcan Centaur, Blue Origin's New Glenn, and the Space X Falcon vehicles. They are working with Lockheed on the Orion vehicle and the Artemis Gateway Habitat. I couldn't be more proud that aluminum manufactured in West Virginia and made by West Virginians will form the very basis of the spacecraft that will take Americans to the moon and beyond.

Answer. Motion Industries, Inc., of Huntington, West Virginia, supplies fasteners to Boeing for the Space Launch System rocket.

Constellium is still an Artemis provider, supporting NASA's Space Launch System rocket and Orion spacecraft, the vehicles that will ultimately send humans farther into deep space than ever before. Both programs use Constellium's innovative aluminum-lithium alloy solution, Airware®. Constellium has the unique capability to produce very wide and thick plates for space modules. Airware's inherent low density, high-specific stiffness, strength and excellent mechanical properties provide the high-performance characteristics required especially during the demanding launch and landing phases.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

Question 1. The James Webb Space Telescope will build on Hubble's discoveries, allowing us to see back in time 13.5 billion years to explore the creation of galaxies and stars. NASA Goddard has led the work on this mission, and the Space Telescope Science Institute will lead mission operations after its launch. It has also has served as an example of international collaboration, with NASA working with the European Space Agency and the Canadian Space Agency.

With the recent concerns regarding Ariane 5 that may impact the launch date of Webb, how is NASA working with the European Space Agency to ensure an on-schedule and successful launch?

Answer. NASA worked closely with partners at the European Space Agency and Arianespace to ensure a successful launch of the James Webb Space Telescope on December 25, 2021. Webb is currently undergoing commissioning at its final location in space and is expected to produce the first scientific images in summer of 2022.

Question 2. The Roman Telescope is expected to revolutionize our understanding of deep space with unprecedented detail and will dramatically increase the speed in which scientists have access to data on some of our universe's greatest mysteries. In 2010, the Roman Telescope was the top priority for the next decade of astronomy by the National Research Council Decadal Survey committee on Astronomy and Astrophysics.

Does the Roman Telescope remain an important priority for NASA?

Answer. Roman remains a top priority for NASA's Science Mission Directorate, and its fiscal year 22 funding by Congress will allow the project to keep making progress toward a May 2027 launch readiness date.

Question 3. In 2017, PFAS were detected in Wallops Flight Facility and the Town of Chincoteague drinking water wells, and I have voiced my concerns to the previous administration over this issue. I understand NASA is conducting groundwater testing and had been installing a groundwater treatment system for the Town of Chincoteague.

What is NASA doing to continue monitoring the environmental safety of WFF and the surrounding communities?

Answer. NASA continues to conduct groundwater testing of the Wallops Flight Facility (WFF) and the Town of Chincoteague's drinking water and its supply wells. NASA's WFF stopped using two drinking water supply wells on the WFF Main Base when PFAS were detected below the Environmental Protection Agency's Lifetime Health Advisory levels in 2017 and 2019. In February 2022, NASA installed a new replacement well and began construction to connect the new well to the WFF Main Base drinking water system. As of February 28, 2022, the groundwater treatment system for the Town has treated over 34 million gallons of water, and ongoing testing continues to show the system is effectively removing PFAS to below detection levels.

Question 4. I believe it is important that the Planetary Science program protect the timelines and funding for Discovery and New Frontiers. These programs provide taxpayers and scientists with missions that address key questions about our solar system, using fewer resources and shorter development time. Mission proposals are led by scientists, can include contributions from industry, universities, and government labs, and are assessed for selection through a competitive, peer review process. In 2019, the Applied Physics Laboratory's Dragonfly, which will explore Saturn's moon Titan, was selected as the New Frontiers program's fourth mission. Earlier this month, NASA announced its 2019 Discovery program competition selections—Goddard's DAVINCI+ and the Jet Propulsion Laboratory's VERITAS—to go to Venus.

Can you commit to protect the selection process and timelines so that New Frontiers maintains two selections per decade, as the Planetary Science Decadal Survey recommends, and Discovery makes a new announcement of opportunity approximately every 2 years, the expectation when both programs were created by Congress more than two decades ago?

Answer. NASA strongly concurs with the importance of the New Frontiers and Discovery cadence recommended by the Planetary Science Decadal Survey, but also needs to take into account the ability of the Planetary Science budget to support any selected missions from a new Announcement of Opportunity (AO) and funding needs from missions already in development such as the Dragonfly mission. NASA has proceeded cautiously given COVID–19 impacts and continued to support previously selected missions.

NASA's Discovery 2019 AO in planetary science remained on schedule, despite COVID–19, leading to the selection of DAVINCI and VERITAS in June 2021. NASA had to announce last year, however, that the final New Frontiers-5 (NF5) AO would need to be delayed by approximately 2 years and move to fall 2024.

NASA is pleased to announce that the fiscal year 2023 President's budget request would advance the final NF5 AO release date forward to no earlier than 2023. The next Discovery AO would follow this NF5 call. This timing would allow the agency to respond to recommendations in the new Planetary Science and Astrobiology Decadal Survey for 2023–2032 and identify priorities for these opportunities.

SUBCOMMITTEE RECESS

Senator SHAHEEN. The subcommittee now stands in recess until Wednesday, June 23, when we will hold a hearing on the budget request of the Federal Bureau of Investigation. Thank you.

[Whereupon, at 3:32 p.m., Tuesday, June 15, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

WEDNESDAY, JUNE 23, 2021

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:06 p.m., in room 192, Dirksen Senate Office Building, Hon. Jeanne Shaheen (Chairman) presiding.

Present: Senators Shaheen, Leahy, Feinstein, Reed, Coons, Moran, Graham, Boozman, Capito, Kennedy, Hagerty, and Braun.

FEDERAL BUREAU OF INVESTIGATION

OPENING STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. Good afternoon. I apologize again for being late. I am delighted to open this Commerce, Justice and Science Appropriations subcommittee hearing with FBI Director Christopher Wray. We are very pleased to have you here and look forward to our conversation. I will just point out before we go into the hearing that we are going to take Members and anybody who arrives after the gavel in order of arrival and that everyone is appearing in person, we are not having anybody appear remotely. So thank you all very much for joining us this afternoon and we will begin.

Director Wray, the FBI continues to be the gold standard for law enforcement agencies worldwide. We count on the more than 35,000 men and women of the FBI to protect our country from violent criminals, terrorists, and foreign agents who mean us great harm. I want to thank them, and of course you as their leader for their dedication and service to the Nation, and in particular for their response to the attack on the Capitol on January 6 and their ongoing investigations into this insurrection attempt.

The work of the FBI as we will hear today is vast, but it is critical. It covers key investigations into counterterrorism, intelligence, child exploitation, and financial and health care fraud, as well as the operation of the National Instant Criminal Background Check System, the system that checks available records to ensure people purchasing firearms can legally own them. This year's budget is a request of $10.3 billion, and it reflects the need to support the important missions of the FBI. For the FBI salaries and expenses, this request is an increase of $465 million above fiscal year 2021 enacted.

And I would just—it struck me as I was going through the briefing on the budget that your request calls for hiring over 150 new personnel. And I am going to be interested in hearing if you have any concerns about actually finding people, given some of the other challenges that I know we are having with workforce in other parts of the country. But, of course, the FBI faces newer challenges almost daily. We all saw one of those challenges, ransomware, front and center in the news last month as the Colonial Pipeline shutdown. That was followed by an attack on the systems of meat processor, JBS. Now, thankfully, both companies were able to get their systems back online and the FBI even helped to track down and return nearly half of the ransom Colonial Pipeline pay. So congratulations to you and all the agents who are involved in that effort, of course.

Unfortunately, not everyone has success with unlocking their IT systems. And it is not just large companies that are being targeted by hackers. It is also smaller hospital and education systems, small businesses, and even police departments as we saw recently with the Metro D.C. Police Department. The New Hampshire Insurance Department has just issued a warning to insurers on June 11 of possible ransomware attacks with a few best practices to protect IT infrastructure and data. So I am interested in hearing your thoughts on this problem, how the FBI can help, and how we can try to get better reporting on these kinds of crimes.

I have also been deeply concerned, as I know the other Members of this subcommittee are, by the reported directed energy attacks in Cuba, China, and other locations on our Government personnel. These attacks have left American public servants and their families suffering alone for years with mysterious brain injuries, without full transparency or guarantee of treatment. Fortunately, we are seeing improvement in that area. And I was pleased that the Senate passed the Havana Act on June 7.

I hope the House also quickly acts to pass in. This bill would allow the CIA Director, the Secretary of State, and leadership at other Federal agencies to provide injured employees with additional financial support for brain injuries. I will have some questions for you today on the FBI's ongoing investigation into these attacks and how you are working with other agencies within the Government.

So I look forward to your testimony today, Director Wray, as I know we all do, and to our discussion. With that, I would like to now turn to subcommittee Ranking Member Senator Moran for his remarks.

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Chair Shaheen, thank you for convening this hearing. And Senator Shaheen convened a classified hearing with the Director in March of this year. However Director, this is the first hearing with you in the CJS subcommittee since May of 2019, so welcome back. Before turning to the FBI budget, the FBI's budget request for this fiscal year, I want to express my condolences at the loss of agents Laura Schwartzenberger and Daniel Alfin in February of this year. Shortly after their deaths just a few days, I met with special agents and staff of the FBI Miami's field office, and

it was apparent to me that both of those individuals were highly regarded. They were considered friends and family.

And so I expressed my deepest sympathies to the entire FBI bureau family. Laura and Daniel are heroes, and our country should always remember them as such. In regard to the budget that is before us Director, the FBI is requesting $10.2 billion for salaries and expenses in fiscal year 2022. This amount is $465 million, or about 4.8 percent above the fiscal year 2021 that was enacted. However, more than two thirds of that amount is for inflationary costs. Perhaps I am making a statement that you want known. It includes employee benefits and rental space.

The FBI is only requesting $151 million in programing increases. These are for initiatives that will actually bolster the FBI's capacity to execute its mission. And while employees and staff and space are important, there are a lot of initiatives that I think the FBI needs to be fully engaged in. In the news, we—the FBI's efforts to protect the United States from terrorist attacks, from counterintelligence threats, from Governments like China, to neutralize threats from cyber criminals, ransomware gangs, they are apparent. However, the FBI budget also supports critical law enforcement, public safety matters, including $492 million to combat international drug cartels and violent gangs, $62 million to investigate and prevent human trafficking, and $223 million to address crimes against children.

Kansans, like most Americans, are deeply committed to public safety and strongly support law enforcement. This hearing is an opportunity for you, Director, for the Bureau, to explain how it is putting taxpayer dollars to good use, to benefit the good use to benefit the safety of our public.

And I look forward to working with you, and Senator Shaheen, and Members of this subcommittee, the subcommittee, as we work to craft the fiscal year 2022 appropriations bill for the Federal Bureau of Investigation. Thank you. Thank you, Senator Shaheen. Thank you, Director.

Senator SHAHEEN. Thank you, Senator Moran. Director Wray.

STATEMENT OF HON. CHRISTOPHER WRAY, DIRECTOR, FEDERAL BUREAU OF INVESTIGATION

Director WRAY. Well, good afternoon, Chairwoman Shaheen, Ranking Member Moran, Members of the subcommittee. I want to first thank you all for the support that you have provided to the FBI in the past and for inviting me here today to talk about the Bureau's fiscal year 2022 budget request. In many ways, the men and women of the bureau are busier today than we have ever been. In fact, I will tell you that hardly a day goes by when I am not struck by some inspiring demonstration of courage and sacrifice on the part of our workforce for the American people. You know, the depth and the breadth of their impact on a remarkable volume of threats is just extraordinary.

I mean, just within the past couple of years, we have thwarted potential terrorist attacks in places like Las Vegas, Tampa, New York, Cleveland, Kansas City, Miami, and elsewhere. In a single month recently, we arrested over 600 violent gang members. That is 1 month. Every 10 to 12 hours, we are opening a new China

counterintelligence investigation. You all both mentioned ransomware. We are now investigating over 100 different types of ransomware, and each of those types has scores and scores of victims. We have opened hundreds and hundreds of COVID fraud investigations.

We performed a record high last year, 40 million NICS firearms background checks. Every single day, every single day, we receive thousands of tips to our national threat operations center, our NTOC, many of which involve imminent threats to life that require swift action by our field offices and our partners. And many of those threats involve harm to children. And just over the last year or so, our folks arrested over 1,400 of the worst child predators, saving hundreds of kids from sexual exploitation. And the list goes on and on. Now, keep in mind, this work happened right in the teeth of the global pandemic because, of course, the FBI kept coming to work every single day. And it is also happening despite the troubling upsurge in attacks against law enforcement officers throughout the country.

So far this year, the number of officers murdered on the job is far surpassing last year's pace, and it is about two officers murdered per week. Tragically, that includes the loss of two members of the FBI family, as Senator Moran mentioned, special agents Laura Schwartzenberger and Daniel Alfin, both shot and killed down near Miami in February. And we honor Dan and Laura's memory every day through our work, work which has unfortunately not gotten any easier given the diverse array of threats we face as a country.

And that is why I appreciated having a candid conversation with all of you during the classified roundtable back in March. And I wish that I could tell you that we have got all the resources we need to carry out our mission to protect the American people and uphold the Constitution. But the funds that we are requesting will go a long way towards doing just that. And before we turn to your questions, I do want to spend a few minutes talking about some of the enhancements that we are requesting. So first, terrorism, terrorism remains the FBI's top priority, as you know.

With our partners, the FBI has already made over 500 arrests in connection with the Capitol attack to date, which is an extraordinary undertaking, and there is more work and more charges sure to come. Unfortunately, January 6 was not an isolated event. Domestic terrorism has been and continues to be a top concern for the FBI. So much so, so much so that over the past 3 years, we doubled our domestic terrorism investigations and arrests. And that is in no small part because of the rise in racially and ethnically motivated violent extremists, which I elevated to our highest threat priority level back in 2019.

And because of the rise in violence from a whole range of anti-Government, anti-authority actors over the past year, including last summer and in different ways, of course, on January 6 itself. I have repeatedly highlighted the severity of the threat more than a dozen times in testimony since starting in this job, and it is why we are requesting a $45 million enhancement for additional personnel and tools to investigate the domestic terrorism threat and more easily share information with our partners.

Second, cyber, cyber is another of our top priorities, and it is easy to see why with intrusions like the Colonial Pipeline, and Solar Winds hacks, and the Hafnium compromise of Microsoft Exchange servers becoming all too common. While dealing with those, we are also contending with hundreds of other cyber threats from Nation, state, and criminal actors alike. And our $40 million enhancement request is an important step towards ensuring that we have got the right people and tools in place to address the evolving threats by some very sophisticated cyber adversaries. We are also asking for an enhancement of a little over $15 million to improve our own cyber security. Those funds will help us secure our infrastructure and limit vulnerabilities that threaten the FBI's mission.

And we are requesting funding to address our dramatically expanded jurisdiction over crimes committed on Tribal land following the Supreme Court's McGirt decision. That $25.5 million enhancement will fund our increased operational needs in the State of Oklahoma while Federal, State, and Tribal authorities work on a more long term solution. Of course, these things that I just listed off are far from our only challenges.

On top of all these things, we also face an unrelenting counterintelligence threat from China, Russia, Iran, and North Korea, and the full spectrum of criminal threats from hate crimes and other civil rights abuses to violent crime spikes in a whole bunch of cities across this country, to human trafficking and crimes against children, just to name a few.

The funding you provide will help us address all these areas. So thank you again for making sure the FBI has the resources we need to stay ahead of our adversaries and keep the American people safe. I look forward to your questions.

[The statement follows:]

PREPARED STATEMENT OF HON. CHRISTOPHER A. WRAY

Good morning, Chairwoman Shaheen, Ranking Member Moran, and Members of the subcommittee. I am honored to be here, representing the men and women of the FBI. Our people—nearly 37,000 of them—are the heart of the Bureau. I am proud of their service and their commitment to our mission. Every day, they tackle their jobs with perseverance, professionalism, and integrity—sometimes at the greatest of costs.

Earlier this year, two of our agents made the ultimate sacrifice in the line of duty. Special Agents Dan Alfin and Laura Schwartzenberger left home to carry out the mission they signed up for—to keep the American people safe. They were executing a Federal court-ordered search warrant in a violent crimes against children investigation in Sunrise, Florida, when they were shot and killed. Three other agents were also wounded that day. We'll be forever grateful for their commitment and their dedication—for their last full measure of devotion to the people they served and defended. We will always honor their sacrifice.

Despite the many challenges our FBI workforce has faced, I am immensely proud of their dedication to protecting the American people and upholding the Constitution. Our country has faced unimaginable challenges this past year. Yet, through it all, whether it was coming to the aid of our partners during the Capitol siege and committing all of our resources to ensuring that those involved in that brutal assault on our Democracy are brought to justice, the proliferation of terrorist violence moving at the speed of social media, abhorrent hate crimes, COVID–19 related fraud and misinformation, the increasing threat of cyber intrusions and state-sponsored economic espionage, malign foreign influence and interference, the scourge of opioid trafficking and abuse, or human trafficking and crimes against children, the women and men of the FBI have unwaveringly stood at the ready and taken it upon themselves to tackle any and all challenges thrown their way.

Today, I appear before you on behalf of the men and women who tackle these threats and challenges every day. I am extremely proud of their service and commitment to the FBI's mission and to ensuring the safety and security of communities throughout our Nation. On their behalf, I would like to express my appreciation for the support you have given them in the past, ask for your continued support in the future, and pledge to be the best possible stewards of the resources you provide. I would like to begin by providing a brief overview of the FBI's fiscal year 2022 budget request, and then follow with a short discussion of key threats and challenges that we face, both as a Nation and as an organization.

FISCAL YEAR 2022 BUDGET OVERVIEW

The fiscal year 2022 budget request proposes a total of $10.28 billion in direct budget authority to carry out the FBI's national security, criminal law enforcement, and criminal justice services missions. The request includes a total of $10.21 billion for Salaries and Expenses, which will support 36,149 positions (13,414 Special Agents, 3,216 Intelligence Analysts, and 19,519 professional staff), and $61.9 million for Construction. The request includes six program enhancements totaling $160.73 million. These enhancements are proposed to meet critical requirements and close gaps in operational capabilities, including: $45.0 million for additional personnel and tools to investigate the threat posed by Domestic Violent Extremists ("DVEs"), receive and process tips from the public, and perform watchlisting and screening activities; $40.0 million to enhance cyber investigative capabilities; $18.8 million to mitigate threats from foreign intelligence services; $25.5 million to support the expansion of Federal jurisdiction for crimes committed on Tribal lands in response to the McGirt Supreme Court case; $6.2 million to support infrastructure needs related to Federal Task Force Officer ("TFO") use of Body Worn Cameras; $15.23 million to enhance the FBI's cybersecurity posture and protect internal networks; and $10.0 million to maintain facilities on the FBI's Quantico campus.

KEY THREATS AND CHALLENGES

This Committee has provided critical resources for the FBI to become what it is today—a threat-focused, intelligence-driven organization. Our Nation continues to face a multitude of serious and evolving threats ranging from homegrown violent extremists to hostile foreign intelligence services and operatives; from sophisticated cyber-based attacks to Internet-facilitated sexual exploitation of children; from violent gangs and criminal organizations to public corruption and corporate fraud. Keeping pace with these threats is a significant challenge for the FBI. As an organization, we must be able to stay current with constantly evolving technologies. Our adversaries—terrorists, foreign intelligence services, and criminals—take advantage of modern technology, including the Internet and social media, to facilitate illegal activities, recruit followers, encourage terrorist attacks and other illicit actions, and to disperse information on building improvised explosive devices and other means to attack the U.S. The breadth of these threats and challenges are as complex as any time in our history. And the consequences of not responding to and countering threats and challenges have never been greater.

The support of this Committee in helping the FBI do its part in facing and thwarting these threats and challenges is greatly appreciated. That support is allowing us to establish strong capabilities and capacities for assessing threats, sharing intelligence, leveraging key technologies, and—in some respects, most importantly—hiring some of the best to serve as Special Agents, Intelligence Analysts, and professional staff. We have built and are continuously enhancing a workforce that possesses the skills and knowledge to deal with the complex threats and challenges we face today—and tomorrow. We are building a leadership cadre that views change and transformation as a positive tool for keeping the FBI focused on the key threats facing our Nation.

Today's FBI is a national security and law enforcement organization that uses, collects, and shares intelligence in everything we do. Each FBI employee understands that, to defeat the key threats facing our Nation, we must constantly strive to be more efficient and more effective. Just as our adversaries continue to evolve, so, too, must the FBI. We live in a time of acute and persistent terrorist and criminal threats to our national security, our economy, and indeed our communities. These diverse threats underscore the complexity and breadth of the FBI's mission: to protect the American people and uphold the Constitution of the United States.

Capitol Violence

First and foremost, I want to assure you, your staff, and the American people that the FBI has deployed our full investigative resources and is working closely with our Federal, State, local, Tribal, and territorial partners to aggressively pursue those involved in criminal activity during the events of January 6, 2021. We are working closely with our Federal, State, and local law enforcement partners, as well as private sector partners, to identify those responsible for the violence and destruction of property at the U.S. Capitol building who showed blatant and appalling disregard for our institutions of government and the orderly administration of the democratic process.

FBI Special Agents, Intelligence Analysts, and professional staff have been hard at work gathering evidence, sharing intelligence, and working with Federal prosecutors to bring charges against the individuals involved. As we have said consistently, we do not and will not tolerate violent extremists who use the guise of First Amendment-protected activity to engage in violent criminal activity. Thus far, the FBI has arrested hundreds of individuals with regards to rioting, assault on a Federal officer, property crimes violations, and conspiracy charges, and the work continues.

Overall, the FBI assesses that the January 6th siege of the Capitol Complex demonstrates a willingness by some to use violence against the government in furtherance of their political and social goals. This ideologically motivated violence underscores the symbolic nature of the National Capital Region and the willingness of some Domestic Violent Extremists to travel to events in this area and violently engage law enforcement and their perceived adversaries. The American people should rest assured that we will continue to work to hold accountable those individuals who participated in the violent breach of the Capitol on January 6, and any others who attempt to use violence to intimidate, coerce, or influence the American people or affect the conduct of our government.

Top Terrorism Threats

As has been stated multiple times in the past, preventing terrorist attacks, from any place, by any actor, remains the FBI's top priority. The nature of the threat posed by terrorism—both international terrorism ("IT") and domestic terrorism ("DT")—continues to evolve.

The greatest terrorism threat to our Homeland is posed by lone actors or small cells who typically radicalize online and look to attack soft targets with easily accessible weapons. We see these threats manifested within both Domestic Violent Extremists ("DVEs") and Homegrown Violent Extremists ("HVEs"), two distinct threats, both of which are located primarily in the United States and typically radicalize and mobilize to violence on their own. Individuals who commit violent criminal acts in furtherance of social or political goals stemming from domestic influences—some of which include racial or ethnic bias, or anti-government or anti-authority sentiments—are described as DVEs, whereas HVEs are individuals who are inspired primarily by global jihad but are not receiving individualized direction from Foreign Terrorist Organizations ("FTOs").

Domestic and Homegrown Violent Extremists are often motivated and inspired by a mix of socio-political, ideological, and personal grievances against their targets, and more recently have focused on accessible targets to include civilians, law enforcement and the military, symbols or members of the U.S. Government, houses of worship, retail locations, and mass public gatherings. Selecting these types of soft targets, in addition to the insular nature of their radicalization and mobilization to violence and limited discussions with others regarding their plans, increases the challenge faced by law enforcement to detect and disrupt the activities of lone actors before they occur.

The top threat we face from DVEs continues to be from those we categorize as Racially or Ethnically Motivated Violent Extremists ("RMVEs"), largely those who advocate for the superiority of the white race, who were the primary source of lethal attacks perpetrated by DVEs in 2018 and 2019. It is important to note that we have also recently seen an increase in fatal DVE attacks perpetrated by Anti-Government or Anti-Authority Violent Extremists, specifically Militia Violent Extremists and Anarchist Violent Extremists. Anti-Government or Anti-Authority Violent Extremists were responsible for three of the four lethal DVE attacks in 2020. Also, in 2020, we saw the first lethal attack committed by an Anarchist Violent Extremist in over 20 years.

Consistent with our mission, the FBI does not investigate First Amendment-protected speech or association, peaceful protests, or political activity. The FBI holds sacred the rights of individuals to peacefully exercise their First Amendment free-

doms. Non-violent protests are signs of a healthy democracy, not an ailing one. Regardless of their specific ideology, the FBI will aggressively pursue those who seek to hijack legitimate First Amendment-protected activity by engaging in violent criminal activity such as the destruction of property and violent assaults on law enforcement officers that we witnessed on January 6th and during protests throughout the U.S. during the summer of 2020 and beyond. In other words, we will actively pursue the opening of FBI investigations when an individual uses—or threatens the use of—force, violence, or coercion, in violation of Federal law and in the furtherance of social or political goals.

The FBI assesses HVEs are the greatest, most immediate IT threat to the Homeland. As I have described, HVEs are located in and radicalized primarily in the United States, who are not receiving individualized direction from global jihad-inspired FTOs but are inspired largely by the Islamic State of Iraq and ash-Sham ("ISIS") and al-Qa'ida to commit violence. An HVE's lack of a direct connection with an FTO, ability to rapidly mobilize without detection, and use of encrypted communications pose significant challenges to our ability to proactively identify and disrupt them.

The FBI remains concerned that FTOs, such as ISIS and al-Qa'ida, intend to carry out or inspire large-scale attacks in the United States. Despite its loss of physical territory in Iraq and Syria, ISIS remains relentless in its campaign of violence against the United States and our partners—both here at home and overseas. To this day, ISIS continues to aggressively promote its hate-fueled rhetoric and attract like-minded violent extremists with a willingness to conduct attacks against the United States and our interests abroad. ISIS' successful use of social media and messaging applications to attract individuals seeking a sense of belonging is of continued concern to us. Like other foreign terrorist groups, ISIS advocates for lone offender attacks in the United States and Western countries via videos and other English language propaganda that have at times specifically advocated for attacks against civilians, the military, law enforcement and intelligence community personnel.

Al-Qa'ida maintains its desire to both conduct and inspire large-scale, spectacular attacks. Because continued pressure has degraded some of the group's senior leadership, in the near term, we assess al-Qa'ida is more likely to continue to focus on cultivating its international affiliates and supporting small-scale, readily achievable attacks in regions such as East and West Africa. Over the past year, propaganda from al-Qa'ida leaders continued to seek to inspire individuals to conduct their own attacks in the United States and other Western nations.

Iran and its global proxies and partners, including Iraqi Shia militant groups, continue to attack and plot against the United States and our allies throughout the Middle East in response to U.S. pressure. Iran's Islamic Revolutionary Guard Corps-Qods Force ("IRGC–QF") continues to provide support to militant resistance groups and terrorist organizations. Iran also continues to support Lebanese Hizballah and other terrorist groups. Lebanese Hizballah has sent operatives to build terrorist infrastructures worldwide. The arrests of individuals in the United States allegedly linked to Lebanese Hizballah's main overseas terrorist arm, and their intelligence collection and procurement efforts, demonstrate Lebanese Hizballah's interest in long-term contingency planning activities here in the Homeland. Lebanese Hizballah Secretary-General Hasan Nasrallah also has threatened retaliation for the death of IRGC–QF Commander Qassem Soleimani.

As an organization, we continually adapt and rely heavily on the strength of our Federal, State, local, Tribal, territorial, and international partnerships to combat all terrorist threats to the United States and our interests. To that end, we use all available lawful investigative techniques and methods to combat these threats while continuing to collect, analyze, and share intelligence concerning the threat posed by violent extremists, in all their forms, who desire to harm Americans and U.S. interests. We will continue to share information and encourage the sharing of information among our numerous partners via our Joint Terrorism Task Forces across the country, and our Legal Attaché offices around the world. The FBI's fiscal year 2022 request includes 179 positions (including 80 Special Agents, 43 Intelligence Analysts, and 56 professional staff) and $45.0 million to counter terrorism and the increasing acts of domestic terrorism occurring across the United States.

Lawful Access

The problems caused by law enforcement agencies' inability to access electronic evidence continue to grow. Increasingly, commercial device manufacturers have employed encryption in such a manner that only the device users can access the content of the devices. This is commonly referred to as "user-only-access" device encryption. Similarly, more and more communications service providers are design-

ing their platforms and apps such that only the parties to the communication can access the content. This is generally known as "end-to-end" encryption. The proliferation of end-to-end and user-only-access encryption is a serious issue that increasingly limits law enforcement's ability, even after obtaining a lawful warrant or court order, to access critical evidence and information needed to disrupt threats, protect the public, and bring perpetrators to justice.

The FBI remains a strong advocate for the wide and consistent use of responsibly-managed encryption—encryption that providers can decrypt and provide to law enforcement when served with a legal order. Protecting data and privacy in a digitally connected world is a top priority for the FBI and the U.S. Government, and we believe that promoting encryption is a vital part of that mission. But we have seen that the broad application of end-to-end and user-only-access encryption adds negligible security advantages. It does have a negative effect on law enforcement's ability to protect the public. What we mean when we talk about lawful access is putting providers who manage encrypted data in a position to decrypt it and provide it to us in response to legal process. We are not asking for, and do not want, any "backdoor," that is, for encryption to be weakened or compromised so that it can be defeated from the outside by law enforcement or anyone else. Unfortunately, too much of the debate over lawful access has revolved around discussions of this "backdoor" straw man instead of what we really want and need.

We are deeply concerned with the threat end-to-end and user-only-access encryption pose to our ability to fulfill the FBI's duty of protecting the American people from every manner of Federal crime, from cyber-attacks and violence against children to drug trafficking and organized crime. We believe Americans deserve security in every walk of life—in their data, their streets, their businesses, and their communities.

End-to-end and user-only-access encryption erode that security against every danger the FBI combats. For example, even with our substantial resources, accessing the content of known or suspected terrorists' data pursuant to court-authorized legal process is increasingly difficult. The often-online nature of the terrorist radicalization process, along with the insular nature of most of today's attack plotters, leaves fewer dots for investigators to connect in time to stop an attack—and end-to-end and user-only-access encryption increasingly hide even those often precious few and fleeting dots.

In one instance, while planning and right up until the eve of the December 6, 2019, shooting at Naval Air Station Pensacola that killed three U.S. sailors and severely wounded eight other Americans, deceased terrorist Mohammed Saeed Al-Shamrani communicated undetected with overseas al-Qa'ida terrorists using an end-to-end encrypted app. Then, after the attack, user-only-access encryption prevented the FBI from accessing information contained in his phones for several months. As a result, during the critical time period immediately following the shooting and despite obtaining search warrants for the deceased killer's devices, the FBI could not access the information on those phones to identify co-conspirators or determine whether they may have been plotting additional attacks.

This problem spans international and domestic terrorism threats. Like Al-Shamrani, the plotters who sought to kidnap the Governor of Michigan late last year used end-to-end encrypted apps to hide their communications from law enforcement. Their plot was only disrupted by well-timed human source reporting and the resulting undercover operation. Subjects of our investigation into the January 6 Capitol siege used end-to-end encrypted communications as well.

We face the same problem in protecting children against violent sexual exploitation. End-to-end and user-only-access encryption frequently prevent us from discovering and searching for victims. In particular, providers can send us vital tips that can lead to the rescue of a child only when those providers themselves are able to detect and report child exploitation being facilitated on their platforms and services. They cannot do that when their platforms are end-to-end encrypted. For example, while Facebook Messenger and Apple iMessage each boasts over one billion users, in 2020, the National Center for Missing and Exploited Children ("NCMEC") received over 20 million tips from Facebook,[1] compared to 265 tips from Apple, according to NCMEC data and publicly available information. Apple's use of end-to-end encryption, which blinds it to child sexual abuse material being transmitted through its services, likely plays a role in the disparities in reporting between the two companies. We do not know how many children are being harmed across the country as a result of this under-reporting by Apple and other end-to-end providers.

[1] Facebook is planning to move its Facebook Messenger platform to end-to-end encryption as a default in the near future. This will result in the loss of most of these tips.

When we are able to open investigations, end-to-end and user-only-access encryption makes it much more difficult to bring perpetrators to justice. Much evidence of crimes against children, just like many other kinds of crime today, exists primarily in electronic form. If we cannot obtain that critical electronic evidence, our efforts are frequently hamstrung.

This problem is not just limited to Federal investigations. Our State and local law enforcement partners have been consistently advising the FBI that they, too, are experiencing similar end-to-end and user-only-access encryption challenges, which are now being felt across the full range of State and local criminal law enforcement. Many report that even relatively unsophisticated criminal groups, like street gangs, are frequently using user-only-access encrypted smartphones and end-to-end encrypted communications apps to shield their activities from detection or disruption. As this problem becomes more and more acute for State and local law enforcement, the advanced technical resources needed to address even a single investigation involving end-to-end and user-only-access encryption will continue to diminish and ultimately overwhelm State and local capacity to investigate even common crimes.

Cyber

In 2020, nation-state and criminal cyber actors took advantage of people and networks made more vulnerable by the sudden shift of our personal and professional lives online due to the COVID–19 pandemic, targeting those searching for personal protective equipment, worried about stimulus checks, and conducting vaccine research.

Throughout the last year, the FBI has seen a wider-than-ever range of cyber actors threaten Americans' safety, security, and confidence in our digitally connected world. But these threats will not disappear when the pandemic ends. Cyber-criminal syndicates and nation-states keep innovating ways to compromise our networks and maximize the reach and impact of their operations, such as by selling malware as a service or by targeting vendors as a way to access scores of victims by hacking just one provider.

These criminals and nation-states believe that they can compromise our networks, steal our property, and hold our critical infrastructure at risk without incurring any risk themselves. In the last year alone, we have seen—and have publicly called out—China, North Korea, and Russia for using cyber operations to target U.S. COVID–19 vaccines and research. We have seen the far-reaching disruptive impact a serious supply-chain compromise can have through the SolarWinds intrusions, conducted by the Russian SVR. We have seen China working to obtain controlled defense technology and developing the ability to use cyber means to complement any future real-world conflict. We have seen Iran use cyber means to try to sow divisions and undermine our elections, targeting voters before the November election and threatening election officials after.

As dangerous as nation-states are, we do not have the luxury of focusing on them alone. In the past year, we also have seen cyber criminals target hospitals, medical centers, and educational institutions for theft or ransomware. Such incidents affecting medical centers have led to the interruption of computer networks and systems that put patients' lives at an increased risk at a time when America faces its most dire public health crisis in generations. And we have seen criminal groups targeting critical infrastructure for ransom, causing massive disruption to our daily lives.

We are also seeing dark web vendors who sell capabilities in exchange for cryptocurrency increase the difficulty of stopping what would once have been less dangerous offenders. What was once a ring of unsophisticated criminals now has the tools to paralyze entire hospitals, police departments, and businesses with ransomware. It is not that individual hackers alone have necessarily become much more sophisticated, but—unlike previously—they are able to rent sophisticated capabilities.

We have to make it harder and more painful for hackers and criminals to do what they are doing. That is why I announced a new FBI cyber strategy last year, using the FBI's role as the lead Federal agency with law enforcement and intelligence responsibilities to not only pursue our own actions, but to work seamlessly with our domestic and international partners to defend their networks, attribute malicious activity, sanction bad behavior, and take the fight to our adversaries overseas. We must impose consequences on cyber adversaries and use our collective law enforcement and intelligence capabilities to do so through joint and enabled operations sequenced for maximum impact. And we must continue to work with the Department of State and other key agencies to ensure that our foreign partners are able and willing to cooperate in our efforts to bring the perpetrators of cybercrime to justice.

An example of this approach is the international takedown in January 2021 of the Emotet botnet, which enabled a network of cyber criminals to cause hundreds of millions of dollars in damages to government, educational, and corporate networks. The FBI used sophisticated techniques, our unique legal authorities, and, most importantly, our worldwide partnerships to significantly disrupt the malware.

A few months ago, cybersecurity companies including Microsoft disclosed that hackers were using previously unknown vulnerabilities related to Microsoft Exchange software to access email servers that companies physically keep on their premises rather than in the cloud. These "zero day" vulnerabilities allowed the actors to potentially exploit victim networks, engaging in activities such as grabbing login credentials, installing malicious programs to send commands to the victim network, and stealing emails in bulk. The FBI first put out a joint advisory in partnership with the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency ("CISA") to give network defenders the technical information they needed to mitigate the vulnerability. However, while many infected system owners successfully removed the web shells others were not able to do so. That left many systems vulnerable to adversaries who could continue to steal information, encrypt data for ransom, or potentially even execute a destructive attack. In response, through a court-authorized operation in partnership with the private sector, we were able to copy and remove malicious web shells from hundreds of vulnerable computers in the U.S. running Microsoft Exchange Server software. This is another example of how the FBI used its unique authorities, in this case, court-issued legal process, and its partnerships with the private sector to have tangible, real-world impact on the problem.

We took upwards of 1,100 actions against cyber adversaries last year, including arrests, criminal charges, convictions, dismantlements, and disruptions, and enabled many more actions through our dedicated partnerships with the private sector, foreign partners, and at the Federal, State, and local entities.

We have been putting a lot of energy and resources into all of those partnerships, especially with the private sector. We are working hard to push important threat information to network defenders, but we have also been making it as easy as possible for the private sector to share important information with us. For example, we are emphasizing to the private sector how we keep our presence unobtrusive in the wake of a breach; how we protect information that companies, and universities share with us, and commit to providing useful feedback; and how we coordinate with our government partners so that we are speaking with one voice. But we need the private sector to do its part, too. We need the private sector to come forward to warn us—and warn us quickly—when they see malicious cyber activity. We also need the private sector to work with us when we warn them that they are being targeted. The recent examples of significant cyber incident—SolarWinds, HAFNIUM, the pipeline incident—only emphasize what I have been saying for a long time: The government cannot protect against cyber threats on its own. We need a whole-of-society approach that matches the scope of the danger. There is really no other option for defending a country where nearly all of our critical infrastructure, personal data, intellectual property, and network infrastructure sits in private hands.

In summary, the FBI is engaged in a myriad of efforts to combat cyber threats, from improving threat identification and information sharing inside and outside of the government to developing and retaining new talent, to examining the way we operate to disrupt and defeat these threats. We take all potential threats to public and private sector systems seriously and will continue to investigate and hold accountable those who pose a threat in cyberspace. The fiscal year 2022 request includes 155 positions (including 52 Special Agents, 57 Intelligence Analysts, and 46 Professional Staff) and $40.0 million to enhance cyber information-sharing abilities and increase cyber tools and capacities. The Request also includes 22 positions and $15.23 million to help protect internal FBI networks.

Foreign Influence

Our Nation is confronting multifaceted foreign threats seeking to both influence our national policies and public opinion, and cause harm to our national dialogue. The FBI and our interagency partners remain concerned about, and focused on, the covert and overt influence measures used by certain adversaries in their attempts to sway U.S. voters' preferences and perspectives, shift U.S. policies, increase discord in the United States, and undermine the American people's confidence in our democratic processes.

Foreign influence operations—which include subversive, undeclared, coercive, and criminal actions by foreign governments to influence U.S. political sentiment or public discourse or interfere in our processes themselves—are not a new problem. But

the interconnectedness of the modern world, combined with the anonymity of the Internet, have changed the nature of the threat and how the FBI and its partners must address it. Foreign influence operations have taken many forms and used many tactics over the years. Most widely reported these days are attempts by adversaries—hoping to reach a wide swath of Americans covertly from outside the United States—to use false personas and fabricated stories on social media platforms to discredit U.S. individuals and institutions.

The FBI is the lead Federal agency responsible for investigating foreign influence operations. In the fall of 2017, we established the Foreign Influence Task Force ("FITF") to identify and counteract malign foreign influence operations targeting the United States. The FITF is led by the Counterintelligence Division and is comprised of agents, analysts, and professional staff from the Counterintelligence, Cyber, Counterterrorism, and Criminal Investigative Divisions. It is specifically charged with identifying and combating foreign influence operations targeting democratic institutions and values inside the United States. In all instances, the FITF strives to protect democratic institutions; develop a common operating picture; raise adversaries' costs; and reduce their overall asymmetric advantage.

The FITF brings the FBI's national security and traditional criminal investigative expertise under one umbrella to prevent foreign influence in our elections. This better enables us to frame the threat, to identify connections across programs, to aggressively investigate as appropriate, and—importantly—to be more agile. Coordinating closely with our partners and leveraging relationships we have developed in the technology sector, we had several instances where we were able to quickly relay threat indicators that those companies used to take swift action, blocking budding abuse of their platforms.

Following the 2018 midterm elections, we reviewed the threat and the effectiveness of our coordination and outreach. As a result of this review, we further expanded the scope of the FITF. Previously, our efforts to combat malign foreign influence focused solely on the threat posed by Russia. Utilizing lessons learned since 2018, the FITF widened its aperture to confront malign foreign operations of China, Iran, and other global adversaries. To address this expanding focus and wider set of adversaries and influence efforts, we have also added resources to maintain permanent "surge" capability on election and foreign influence threats.

These additional resources were also devoted to working with U.S. Government partners on two documents regarding the U.S. Government's analysis of foreign efforts to influence or interfere with the 2020 Election. The reports are separate but complementary. The first report—referred to as the 1a report and authored by the Office of the Director of National Intelligence—outlines the intentions of foreign adversaries with regard to influencing and interfering in the election but does not evaluate impact. The second report—referred to as the 1b report and authored by the Department of Justice, including the FBI, and Department of Homeland Security, including the CISA—evaluates the impact of foreign government activity on the security or integrity of election infrastructure or infrastructure pertaining to political organizations, candidates, or campaigns.[2]

The main takeaway from both reports is there is no evidence—not through intelligence collection on the foreign actors themselves, not through physical security and cybersecurity monitoring of voting systems across the country, not through post-election audits, and not through any other means—that a foreign government or other actors compromised election infrastructure to manipulate election results.

While the 2020 election is over, the FBI will not stop working with our partners to impose costs on adversaries who have or are seeking to influence or interfere in our elections.

The fiscal year 2022 request includes 28 positions (including 7 Special Agents, 4 Intelligence Analysts, and 17 Professional Staff) and $18.8 million to help combat the threats posed by foreign, and potentially hostile, intelligence services and other foreign government actors.

CRIMINAL THREATS

We face many criminal threats, from complex white-collar fraud in the financial, healthcare, and housing sectors to transnational and regional organized criminal enterprises to violent crime and public corruption. Criminal organizations—domestic and international—and individual criminal activity represent a significant threat to our security and safety in communities across the Nation.

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[2] These reports are required by sections 1(a) and 1(b) of Executive Order 13,848.

Violent Crime

Violent crimes and gang activities exact a high toll on individuals and communities. Many of today's gangs are sophisticated and well organized, and use violence to control neighborhoods and boost their illegal money-making activities, which include robbery, drug and gun trafficking, fraud, extortion, and prostitution rings. These gangs do not limit their illegal activities to single jurisdictions or communities. The FBI is able to work across such lines, which is vital to the fight against violent crime in big cities and small towns across the Nation. Every day, FBI special agents work in partnership with Federal, State, local, and Tribal officers and deputies on joint task forces and individual investigations.

Similar to the FBI's work combatting gangs, the FBI also investigates the most serious crimes in Indian Country—such as murder, child sexual and physical abuse, violent assaults, drug trafficking, public corruption, financial crimes, and Indian gaming violations. As you are aware, there are 574 federally recognized American Indian Tribes in the United States, and the FBI has Federal law enforcement responsibility on nearly 200 Indian reservations. This Federal jurisdiction is shared concurrently with the Bureau of Indian Affairs ("BIA"), Office of Justice Services; the FBI works very closely with BIA and other Federal, State, and Tribal partners across the United States on crimes in Indian Country.

Recently, the FBI's work in Indian Country in Oklahoma increased significantly due to the July 9, 2020, Supreme Court ruling in *McGirt v. Oklahoma,* which determined that the territorial boundaries of the Muscogee Creek Nation ("MCN") fall under Federal Indian Country jurisdiction, making the FBI the responsible law enforcement agency for offenses committed by or victimizing a Tribal member. The principles of the *McGirt* decision also apply to the status of the Cherokee, Chickasaw, Choctaw, and Seminole Tribal territories in Oklahoma. Combined, all five reservation territories encompass approximately 32,000 square miles, or 45 percent of the State of Oklahoma. The total population within the combined borders is roughly 1.9 million, of which approximately 420,000 are enrolled Tribal members.

This increase in FBI jurisdiction poses significant and long-term operational and public safety risks given the challenges associated with the increased number of violent criminal cases now under Federal jurisdiction within Oklahoma's IC territory. Since this decision, the FBI's Oklahoma City Field Office ("OC") has seen a drastic increase in the total number of Indian Country investigations and now has the FBI's largest investigative responsibility. From July 9, 2020 to March 23, 2021, FBI OC opened nearly 1,000 Indian Country investigations (most of them adopted from previous State actions), prioritizing cases involving the most violent offenders who pose the most serious risk to the public. As a point of comparison, the FBI's other 55 Field Offices opened a combined total of 1,255 IC investigations during the same period, with FBI Minneapolis, the next largest Indian Country office behind FBI OC, opening over 300 cases. This workload data primarily represents the cases from the MCN reservation alone; this workload is expected to increase substantially given the additions of the Cherokee and Chickasaw reservations in mid-March and the Choctaw and Seminole reservations in April. The FBI is anticipating 2,500 new cases next year and approximately 5,000 adopted cases from previously adjudicated in Oklahoma State courts which were overturned either by *McGirt* or subsequent Oklahoma court decisions applying *McGirt.*

To effectively conduct these investigations, the FBI has conducted temporary duty ("TDY") rotations of 140 Special Agents, Investigative Analysts, Victims Specialists and other professional staff to the Muskogee and Tulsa RAs, the offices most impacted by the decision. The FBI has also expanded State, local, and Tribal participation on task forces to 230 Task Force Officers from 32 agencies to assist with initial response and investigative efforts. The U.S. Attorney's Offices in the Eastern District of Oklahoma and the Northern District of Oklahoma also increased their staffing. In order to support the U.S. Attorneys' effective prosecution of these crimes, the FBI must have the capability to sustain an enhanced presence in FBI OC. As such, the fiscal year 2022 request includes $25.5 million to support the surge in personnel to meet the immediate need, as the situation on the ground continues to evolve. In addition, the fiscal year 2022 request includes $6.2 million to fulfill the Department of Justice's October 2020, policy on Use of Body-Worn Cameras by federally Deputized Task Force Officers.

CONCLUSION

Finally, the strength of any organization is its people. The threats we face as a nation have never been greater or more diverse and the expectations placed on the FBI have never been higher. Our fellow citizens look to the FBI to protect the United States from all of those threats, and the men and women of the FBI continue

to meet and exceed those expectations, every day. I want to thank them for their dedicated service.

Chairwoman Shaheen, Ranking Member Moran, and Members of the subcommittee, thank you for the opportunity to testify today. I am happy to answer any questions you might have.

Senator SHAHEEN. Well, thank you very much. You pointed out that both Senator Moran and I raised the ransomware attacks in our opening remarks. It wasn't clear to me, looking at your budget request, exactly where that was covered and whether you feel like you have the resources that you need in order to address this kind of activity. Can you just be specific about where you are looking to get the resources and what you are going to need?

Director WRAY. Right. So our budget request, the enhancements we requested include 155 positions and $40 million for cyber. And a huge part of that will be going very much to the ransomware campaign that we are working on. We did about 1,100 different kinds of disruption actions against cyber adversaries last year, talking about arrests, criminal charges, convictions, dismantlement, and disruptions. And I think on the ransomware piece specifically, our strategy is to go after the entire criminal ecosystem that exists there.

So not just the people demanding the ransomware, but all the people who helped facilitate it. You know, the—we are trying to go after the actors. We are trying to go after the helpers. We are trying to go after their infrastructure. We are trying to go after the money. You mentioned our efforts to recover the cryptocurrency that was paid in ransom, so things like that, but it has to be a cross the Government effort. Our National Cyber Investigative Joint Task Force brings together about 30 different agencies, all colocated together with an effort to try to have more joint sequenced operations to maximize impact.

We have got to take a little bit of our page out of the counterterrorism strategy book, everybody working together, focusing on prevention and disruption. And that is what we are trying to do.

Senator SHAHEEN. Well, two related questions. There are some people who suggest that we should outlaw payment for ransomware attacks. Do you agree with that? And second, how do we go after groups like in the Colonial Pipeline case where we think they are operating out of Russia with full knowledge of the Putin administration in Russia?

Director WRAY. So our guidance to industry is not to pay the ransom. And there is a whole host of reasons for that, but the most important thing, the most important thing, because I understand it is a difficult decision for victims to make. The most important thing is that they reach out and connect with law enforcement, with us as quickly and transparently as possible. It is a little bit like the example—you know, we encourage people when there is kidnappings of humans not to pay the ransom. But you want to have, in effect, the cyber equivalent of the FBI agent sitting there with the person talking to the hostage taker, because there is all kinds of things we can do to help ensure a happy ending to the investigation if we are engaged early and transparently.

So that is the most important thing. But in general, we would discourage paying the ransom because it encourages more of these

attacks, and frankly, there is no guarantee whatsoever that you are going to get your data back, among other things.

Senator SHAHEEN. So do we need to think about changes, legislative changes to address authorities for law enforcement and the FBI on hacking incidents and ransomware incidents? I remember several years ago we had proposed legislation that never went anywhere that would have required reporting by companies. Should we be looking at something like that again?

Director WRAY. Well, I obviously don't want to get out in front in terms of a specific legislative proposal. But I will say that if we don't solve the riddle of how to get the private sector promptly and transparently working with us, and more and more companies, I should say, are doing that all the time. But if we don't make that sort of the norm, we are going to have a heck of a time winning this conflict, if you will. And so anything that helps provide more incentive for that to happen, I think is a step in the right direction.

Senator SHAHEEN. Good. I mentioned in my opening comments, and we have discussed this before, what has been called the Havana's syndrome. How involved is the FBI in the cooperative effort in the administration to take a look at what's happening with these attacks? Do you think—can these be classified as a crime? And if so, how do we go after either the perpetrators or allow victims to get restitution for what they have suffered?

Director WRAY. So we are very much involved. We are working closely under the auspices of the NSC with our interagency partners, especially the CIA, DOD, the State Department and others, and bringing what we can bring to the table. Our highest priority, of course, is the protection and well-being, the health and well-being of U.S. Government personnel.

We are making progress for sure, but we are not yet at a point where we know the cause of the incidents and whether it was an attack and if so, who did it, etcetera. I will tell you that we are trying to be aggressive, and we are viewing all of the U.S. Government personnel who have these symptoms, from our perspective, they are victims. And we want to treat them as potential victims. And they are our colleagues in the Federal Government, so we care deeply about them.

Senator SHAHEEN. Thank you. Senator Moran.

Senator MORAN. Chairman, thank you. Director, I recently visited McAllen, Texas, where I met with your special agent in charge of the San Antonio field office. He was able to brief me on the counterintelligence threats to the area, specifically to mainstream companies with a National Security or innovation focus such as SpaceX. What I heard was disturbing, terribly threatening, in my view, to the well-being of Americans and to our economy. Director Wray, are you aware of those threats? And what can you tell us in this unclassified setting about this topic?

Director WRAY. Well, I am very pleased that you were able to meet with SCC Combs. It is a very high performing office down there and they are dealing with some very challenging and complex threats. And, of course, I have spoken in the past about the very serious counterintelligence threats that I think we face from our adversaries. And we have been very focused on working with the private sector, specifically on the counterintelligence front.

And as the U.S. moves more and more towards the private sector in terms of space exploration, we need to support those companies in much the same way, for example, we would support NASA. And I think beyond that, it would probably be better for me to arrange, you know, some kind of classified briefing for you because I can't get in a whole lot more detail in an open setting.

Senator MORAN. Perhaps if it is okay with you, I will look for a time for me to come to see you.

Director WRAY. Okay, great. Thank you.

Senator MORAN. Over the last two weeks, Axios has extensively reported on massive fraud within the unemployment insurance programs. The numbers are staggering. Experts suggest that criminals may have stolen as much as half of the unemployment benefits distributed over the last year, fraudulent claims could reach $400 billion.

Alarmingly, the bulk of these funds appear to have been stolen by foreign criminal syndicates, making this, Axios observes, not just theft, but a matter of National Security. Director, what is the FBI's best assessment of the extent of unemployment insurance fraud over the last year, and how much is believed to have been stolen by foreign criminal organizations?

Director WRAY. So we obviously share your concern. We have seen a huge spike, huge spike in unemployment fraud cases and investigations from COVID. By last count, and this is a rough number, but by last count, I think we had about 800 unemployment fraud investigations and the vast majority of those have some tie to the pandemic. As far as foreign criminal involvement, we certainly are aware of a number of schemes and scams, but I don't know that I have any kind of estimate of how much of the overall loss comes from those kinds of actors. But it is something that we are keenly attuned to.

And, of course, we are trying to take advantage of both all 56 of our field offices here, but also working with our legal offices overseas, because they may be able to work with foreign partners to help us pursue, you know, bad actors elsewhere and their involvement.

Senator MORAN. Director, thank you. I hope to have maybe additional conversation in this regard as well. In September, the FBI will release its annual data set on violent crimes in the United States. That report will show what you have already acknowledged publicly, a spike in serious violent crime in a number of American cities, including significant increases in murder and aggravated assaults. Kansas, unfortunately, has not been immune.

The city of Wichita reported 59 homicides in 2020, the highest total since 1993, and about one every 6 days. According to Wichita Police Chief Gordon Ramsay, this trend has continued into 2021. In your speech to the International Association of Chiefs of Police last year, you acknowledge the FBI can play a critical role in reducing that violent crime, including by surging agents and other FBI resources to affected cities by working together with State and local partners.

Director Wray, what is the FBI doing to address these serious spikes in violent crime? And would you consider further surges of personnel and resources to those affected communities?

Director WRAY. So we absolutely are concerned about the rise in violent crime, specifically the most dangerous type of violent crime, namely the homicide rate all over the country. And key to that is partnership. We are bringing our resources to bear through our 170 or so safe streets task forces, our 50 or so violent crime task forces. So you are talking about 500, give or take, you know, FBI agents plus task force officers. You know, I think we did 6,500 violent crime arrests amidst the worst of the pandemic.

So you are talking about 14 a day. You know, we are also trying to contribute in other ways through NICS, making sure that guns don't get in the hands of the people legally prohibited from having them. Our tip line, our lab supporting State and locals. And we have, to your point about surging resources, we have recently created a new violent crime rapid deployment team, at headquarters, the purpose of which—run out of headquarters, I should say, the purpose of which is to be able to surge to sort of crisis situations.

I know that in Kansas City in that—I don't mean Kansas City, the city, but the division, we had 140 gang arrests and 200 something violent crime arrests last year. And I remember I think we spoke once about the, in Wichita, there was a gang, the junior boy violent gang that, you know, that one takedown largely dismantled a long running a gang in Wichita, you know, 20, say 25 arrests, seizing guns, drugs, money and so forth. So we are going to be trying to do more and more of that wherever we can.

Senator MORAN. Director, I thank you and the Kansas City FBI bureau for their attention to Kansas communities, Kansas City and Wichita in particular. My time has expired. I would just say to the Director, I also am the Ranking Member of the Senate Committee on Veterans Affairs. It is meeting at the same time. My absence from time to time today will not be a reflection on my lack of interest in what you have to say.

Senator SHAHEEN. Thank you, Senator Moran. Senator Feinstein.

Senator FEINSTEIN. Thanks very much, Madam Chairman. I watched the CNN show Sunday night on January 6, and it has been nearly 6 months since the capital was attacked, and I think we still lack a clear picture of the FBI's understanding of the threat in the days leading up to the attack. The Post reported in January that dozens of individuals listed in the terrorist screening database traveled to Washington before the Capitol attack. The FBI's Washington field office, I understand, stated that the bureau disrupted the travel of a number of individuals who were planning to travel to D.C., "with intentions to cause violence."

It is my understanding that you testified last week to the House Oversight Committee that, "none of those people had indicated an intention to attack the Capitol." As you look at this now in perspective, Director Wray, could you clarify for us what the FBI knew and what it didn't know before the attack took place?

Director WRAY. Well, I guess the first thing I would say about the facts leading up to January 6 is because of all the investigations we are doing right now, we are continuing to learn all sorts of things post January 6. And sometimes there gets to be a little bit of conflation about information that we are developing through those hundreds of cases with information that we had before. So I just want to put that out there in front, because I am sure there

will be, continue to be news coverage of different sorts as we move forward. I think what I would say is that before January 6, we were, to my knowledge, aware that there would be large numbers of individuals coming to D.C. to participate in protests, protests, and that we had some information that gave us concerns about the potential for violence more generally. There is, of course, this Norfolk report, which has gotten a lot of attention, which was a one piece of information that was raw and unverified and unattributed.

And we passed that three different ways as quickly as possible shortly after getting it. What we did not have, to my knowledge at least, is intelligence indicating that hundreds and hundreds of people were going to breach the Capitol complex. That to my knowledge, we did not have that. You mentioned these individuals that we interviewed or disrupted before January 6. I think there is a little bit of garble in maybe some of the news reporting. So I can't speak to the specific article that you were citing, but just in general, what we are talking about there are a handful of small number of individuals who were previously predicated subjects of investigations who were approached in one way or another, interviewed or in some other way disrupted from traveling.

I want to be clear, though, there is a big difference between people indicating that they might travel to D.C. and people indicating they might travel to D.C. to commit a violent attack, much less a violent attack against the Capitol, which is not my understanding of what those individuals revealed beforehand.

Senator FEINSTEIN. I think many of us are trying to understand and not to criticize as much as to be able to correct our systems. The number of people, and if you watch the CNN show Sunday night, which went on and was very graphic, there was no question when you really had pictures of who was there and what they were doing, that people came with an intent to do what they did. And I have never really been able to get a clear picture of what is—what was known and what wasn't known, because what I saw on television Sunday night was something I have never seen before in this country like that. And it was shocking.

Director WRAY. Well, we consider the whole event shocking and appalling, and we are absolutely determined to make sure that we do our part to make sure it never happens again. So I want to be crystal clear on that. I think you know something—one thing that gets a little bit lost sometimes is that even though we have had hundreds and hundreds of domestic terrorism investigations ongoing, actually very, very few, almost none of the people who we have arrested since January 6, for January 6 were people——

Senator FEINSTEIN. How many people did you arrest—have been arrested?

Director WRAY. I think we have got around well, I think it is a little over 500 arrests now, once you include, and there are a few that have been done by some of our partners as well. So the FBI's arrests are close to 500. And then when you add in the partners, it is a little over 500. And I want to be clear, we have got hundreds more investigations still ongoing.

And we expect in many cases we will have even more serious charges against some of the people we already have charged. So this is far from over. And with each arrest and each case we bring,

not only are we driving towards accountability for the attack, but we are also learning more about what was out there beforehand so that we can use that to get better going forward.

Senator FEINSTEIN. Well, it was pretty clear from the footage I saw Sunday night that a lot was out there. They came with intent now proving it is another story, but this was an eye opener for me as I watched that show, and I think it is really important that we understand not to criticize it is over, but to know what to do to prevent that from ever happening again.

Director WRAY. Well, I agree that absolutely we want to do our part and I haven't seen the particular CNN show that you are talking about, but certainly we are looking at things like how can we develop better sources? How can we get better with data analytics for the volumes of information that we get? How can we deal with the encryption issue, which I know is something you and I have spoken about in the past? And that is very much a phenomenon with this threat, because a lot of the most significant and revealing communications between these actors, and we saw it related to the January 6 people now that we are investigating, and we saw it over the summer with some of the attackers in those events, it is through encrypted messaging communications. And we have got to figure out a solution to that.

Senator FEINSTEIN. Thank you.

Senator SHAHEEN. Thank you, Senator Feinstein. Senator Graham.

Senator GRAHAM. Thank you, Directory Wray. And please pass on all of our respect for what you and your agents and support personnel do. It seems to me you got a pretty full plate. Is that fair to say?

Director WRAY. It certainly feels full.

Senator GRAHAM. Okay. If Senator Moran is right, which I am sure he is, when you look at personnel cost increases and generally cost of doing business, most of the increases requested about 65 percent go to that and $150 million left for new programs. Do you agree with that, new capabilities?

Director WRAY. Well, I think sometimes I have a little bit of a hard time in this format tracking all the numbers. I think one of the, one of the challenges is that last year's budget had a significant number of enhancements, but at the same time, also a bunch of reductions to the base. So it is like giveth with one hand, taketh away with the other.

Senator GRAHAM. If the subcommittee decided to say increase by $100 million your budget, could you spend it wisely?

Director WRAY. I can assure you that any money that this subcommittee thinks sees fit to give, I promise it will be put to good use.

Senator GRAHAM. Good. I believe you. So there is a record number, in certain jurisdictions and really a trend all over the country, of retirements by police officers and recruiting problems. Are you familiar with this?

Director WRAY. Very much so.

Senator GRAHAM. What do you think is causing this?

Director WRAY. I think this is a very, very challenging time for the law enforcement.

Senator GRAHAM. Have you ever known a more challenging time since you have been in the business?

Director WRAY. I have not.

Senator GRAHAM. Okay, what can we do to deal with it?

Director WRAY. I think it starts with a recognition that it takes an incredibly special person to get up in the morning and put his or her life on the line for a total stranger. And then when you stop and think about how few people are willing to do that, think about how many people are willing to do that every single day for an entire career. And so I think it starts with a level of gratitude and respect for those people.

Senator GRAHAM. Is this a fair statement that police reform, I think, is necessary, better training, better standards, more exposure to departments for the conduct of the officers legally, but at the same time a deeper appreciation for the job that police officers do? Do you agree that those two things are not inconsistent?

Director WRAY. I would. I would agree with that.

Senator GRAHAM. Okay. And I hope we can deliver there. In terms of the crime wave that we are facing, increase in murders particularly, the administration is going to announce a five point program today to deal with the rise in crime. Were you consulted by the administration in that program?

Director WRAY. Well, we—yes, we are working with the Justice Department through our piece of it. I am not—I haven't seen the announcement itself, but the——

Senator GRAHAM. Do you know what the five point plan is?

Director WRAY. I don't—I know our part.

Senator GRAHAM. Okay. What is your part?

Director WRAY. So we are working with the Department on something called Project Safe Neighborhoods, which is a revival of an effort that you may remember from the Bush administration, frankly. And it is a multipoint plan geared towards attacking gun violence all across the country. And so the FBI working with all of our partners on that.

Senator GRAHAM. Do you believe that one of the reasons crime is on the rise is that certain jurisdictions have basically eliminated bail? You catch them on Monday morning, and they are out on the streets Monday afternoon?

Director WRAY. Well, I do think there are a lot of causes, but I think one of the causes of the violent crime spike are certain kinds of prosecution practices——

Senator GRAHAM. We are not prosecuting enough people and we are sending a signal that maybe you can rob or loot a store and get away with it and it sort of escalates. Is that fair to say?

Director WRAY. Well, I guess I would put it this way. I think there is nothing more disheartening to a law enforcement officer to see somebody that you worked hard to arrest promptly back out, committing a crime again. There is enough people to go after the first time, without the same person over and over again.

Senator GRAHAM. I totally agree. That is the problem. I hope we will deal with it. When it comes to Russia, Dark Side is supposedly responsible for the Colonial Pipeline attack and Revil—Ravil, the attack on JBS meat processing attack. Both these are Russian speaking criminal organizations. Do you believe it is possible that

they could operate in Russia without Putin's Government knowing about it?

Director WRAY. So many things I would like to say.

[Laughter.]

Senator GRAHAM. This is the chance to say it.

Director WRAY. Yes, well—well, let me say this. You mentioned Darkside. The other organization you are talking about is, goes by the name are R-Evil.

Senator GRAHAM. Yes, I am sorry.

Director WRAY. Aptly named. I think what I would say is this, over and over again——

Senator GRAHAM. We are policy makers, I know my time is up, we have got to make a decision eventually, how to respond to Russia. We have had to cyber terrorism attacks emanating from Russian speaking criminal enterprises. I think all of us believe it is impossible for these people to operate in Russia without some acknowledgment by the—some support by the Government or at least a lack of action on their part. We got to make a decision. Would we be irresponsible in assuming that Putin is giving cover these groups and the only way things will change is for him to pay a price for giving that cover? Or is that illogical on our part?

Director WRAY. I think the Russian government has a lot of room for improvement on this subject. Let me just leave it at that.

Senator SHAHEEN. Thank you, Senator Graham. Very diplomatic, Director Wray. Senator Reed.

Senator REED. Thank you very much, Madam Chairman, and thank you, Director, for your service and the service and sacrifice of so many of your men and women in the FBI. January 6 was a disheartening moment. And I am wildly understating that. There was an ad hoc response which relied a great deal on the National Guard and other police elements. We are looking forward now, as we should, to a more coherent response if the situation occurs again.

And as an alternative to the National Guard, I think and I like your comments, if we could put together a Federal, State, local law enforcement group that is trained as integrated, is compensated, and is coordinated for such an event with the participation of the Bureau in key areas, would that be more effective than summoning the Guard from everywhere?

Director WRAY. Well, I certainly would say it this way. I certainly understand the attraction of having a law enforcement kind of ready to deploy type of force. We have worked very well with the National Guard, but there are challenges that they face, you know, in their ability to deploy. Not on the FBI side, just to be clear. You know, we don't and really never have in our 113 year history really done crowd control or static defense or things like that. So we don't really have the skills, the training, and the equipment to do that part of it. What we do have are overseen by our critical incident response group.

We have things like our hostage rescue team which can deploy in certain situations. We have crisis negotiators. We have aerial surveillance in certain instances, you know, things like that that we can lend to the effort. But I think most of what you are talking

about would ultimately be more on the shoulders of other agencies. I want to be careful not to speak for them.

Senator REED. No, but I think you have critical elements that you could engage, and they would have to rehearse, practice, etcetera. So I don't—I think one of the lessons is, ad hoc is not that good when you are facing a mob of folks. The other aspect here too is, just for the record, the National Guard still waiting to get paid hundreds of millions of dollars, which could affect their training this summer. So for all my colleagues, if you could urge everyone to pay the National Guard that would be useful. One of the most difficult issues that you face in your intelligence capacity is trying to recognize, respect First Amendment rights to communicate freely with your responsibility to monitor what is going on the web. Can you give us an idea of how you make that call? I presume you have active—well, let me not presume, do you have active sort of intelligence agents that are going through the web and trying to identify?

Director WRAY. So this is a complicated topic. I will try to do my best to give sort of a shorthand version. But there may be nuances that get lost in the description. So what we—there are long standing policies that go back, you know, 10, 15 plus years, the Attorney General guidelines, as implemented by something called the DIAG, which are all designed to tell us what we can and cannot do, especially when it implicates civil liberties and so forth, and that—there is parts of it that deal with social media.

And so what we can do depends on whether or not we have got—what level of predication we have and whether we have got an authorized purpose. We do get all kinds of tips and leads from the public, from partners of all shapes and sizes, some of which include things on social media. And we pursue those in whatever way we can under those policies. What we don't do, and some people, I think are confused about this, what we don't do is just have people sitting there, at least without proper predication and an authorized purpose, just kind of monitoring somebody's, you know, Internet traffic and trying to see if there is something there just in case. That we don't currently do.

Now, in theory, somebody could look at the policies and decide that the balance needs to be struck a little differently. There is all kinds of considerations that go into that. But to give a really fulsome answer to your question would probably require a much longer discussion.

Senator REED. I think it probably would require a law review article at least. Thank you, Madam Chairman.

Senator SHAHEEN. Thank you, Senator Reed. Senator Hagerty.

Senator HAGERTY. Thank you, Madam Chair. Director Wray, I want to thank you for your long service to our Nation. Very much appreciate it. The first topic I would like to cover with you has to do with the morale of the FBI. I had the great honor of serving and working with a great FBI team in my previous position as ambassador to Japan. Your rank and file are patriotic and honorable men and women who I am certain wake up every day looking at how they can best serve the United States of America. But over the past 5 years, I think the reputation of the FBI has really come under challenge. We have seen a presidential candidate spied upon in

2016. We have seen headquarter investigators using blatant political bias as they pursue investigations.

And I think that really has called into question America's confidence in the agency. I know it is disheartening to the men and women that serve at the FBI who came to serve their Nation, not to pick sides in a presidential battle. I am interested in, and I know you are working hard on this, but what are you doing, what are you undertaking to restore America's confidence and the confidence of the men and women that work for you in the agency as a nonpartisan, and an unbiased, nonpolitical institution?

Director WRAY. So I have a lot to say on this subject. First, I will stack our workforce up against any workforce, anywhere, any time. A lot of the press coverage and discussion has been based on essentially two investigations over about an 18 month period involving a small number of people. And we are an organization of 37,000 people. It has been around for 113 years doing thousands and thousands of investigations every year. And what I see, what I hear from the American people themselves is a resounding, even consistent appreciation and respect for what our folks do. The hundreds of—we speak, through our work, to hundreds of kids we have saved, the terrorist attacks we have disrupted, the scores of violent gangs, COVID fraudsters, Chinese spies, etcetera. And I say that from having visited all 56 of our field offices, most of them more than once, met with law enforcement partners from all 50 States and over 50 countries, spoken with judges, prosecutors, private sector leaders, community leaders, victims, and their families. And the refrain I get is very different from what is in a lot of the news coverage.

Now, I will give you a bright spot, because I know you care about our workforce. Our attrition rate is 0.4 percent. And you would be hard pressed to find an organization out there, public or private, with an attrition rate that low. Second, our recruiting, that is the number of Americans all across this country, including every State represented in this subcommittee, applying to be special agents, so expressing their view of the FBI through their feet by trying to sign up and put their lives on the line, working with us for an entire career has tripled, triple what it was when I started this show.

Senator HAGERTY. That is very encouraging.

Director WRAY. And that is through the pandemic. And to me, that speaks volumes about what Americans everywhere actually think about the FBI.

Senator HAGERTY. And I think, you know, that this subcommittee stands behind you as well. And we want to see this budget deployed in a way that continues to support the morale and the patriotic men and women that work for you. And I think that speaks volumes, the statistics that you went through. And like you, I have a lot to say and feel about this as well, because I think it is a great agency that you run. And I want to see the pristine image of the agency restored once again and appreciate your leadership in that direction. If I could turn right now to another area, this is having to do with a significant increase in crime that we saw in 2020. And again, another surge in crime that is underway right now. Homicide rates up 30 percent last year, another 25 percent this year. Back in 2020, Operation Legend was put into play.

Sadly, Operation Legend was named for a 4 year old boy who was killed by a stray bullet in Kansas City. That operation led to the arrest of some 6,000 criminals, the confiscation of 17 kilos of fentanyl that are killing our kids every day. In light of the surge that is underway yet again in crime, why is it that Operation Legend was brought to an end in December of 2020?

Director WRAY. I can't—you know, Operation Legend was something that was run by the Justice Department, so I probably would leave that part to the Justice Department. Certainly I agree with you that I think it was a big success. It probably was not a sustainable effort, you know, in perpetuity, given the way in which we were all—such a surging resources from all over. We are I mentioned, I think, in response to Senator Moran's question, that on our end, we have recently created this violent crime rapid deployment team, which is an effort to take a little bit of the idea behind Legend and make that available.

But that is really—that is not going to be a complete answer in its own right. And I think you are exactly right that this is a topic that cannot be overlooked in the middle of everything else that is going on, because I think most Americans right now, the security threat they are most concerned about is violent crime.

Senator HAGERTY. Yes. Well, thank you for leadership in that direction, Director Wray. Thank you, Madam Chair.

Senator SHAHEEN. Thank you. Senator Leahy, and Chairman of the Appropriations Committee.

Senator LEAHY. Thank you very much. Director, always good to see you. And thank you for being here. I think we could all talk about how much we appreciate what the men and women of the FBI do and truly mean it. Several of your predecessors worked with me and worked with the FBI both in Vermont and down here, and I do appreciate their skill and dedication. With all these wild conspiracy theories going on about the insurrection on January 6, all of which have tried to portray the attack on the Capitol as anything but a violent assault by domestic extremists on the heart of democracy, even though everybody who was here saw that is exactly what it was. You have debunked some of these theories when we last spoke in March when you testified in the Judiciary Committee.

It seems a new crop of excuses and conspiracy theories have come up since you testified before the House Oversight Committee. So let me give you another opportunity to discredit the dangerously bogus claims have been floating around about the January 6 attack, particularly those that are relating to the FBI's involvement in the attack.

Let me just ask you directly, did anyone in the Trump White House ever encourage or direct you or anyone in your staff to downplay the potential threat of violence in January 6, when Congress was scheduled to take our constitutionally mandated presidential vote count?

Director WRAY. No.

Senator LEAHY. I will take that elaborate answer as a no, and I appreciate it. The FBI is responsible for investigating Federal election crimes such as voter suppression that intentionally target minority protected classes.

The growing wave of voter suppression laws in dozens of States raise serious concerns. What are you doing with the FBI to prepare for the upcoming elections in which many of us expect to see unprecedented level of voter suppression?

Director WRAY. So we are doing a few different things. We have election crime coordinators in every field office, and of course they focus on the full manner of types of election crimes. And they are all well connected with each other and through our criminal investigative division. Voter suppression specifically when we get involved is more through our civil rights program. And so we work closely with the Justice Department, both the Civil Rights Division and the U.S. Attorney Offices on that. In addition, you may remember from our past engagements that we created, I created the Foreign Influence Task Force early on in my tenure. And although that is focused on foreign influence, of course, we are concerned about foreign influence, malign foreign influence that could in turn have a sort of surreptitious effect on voter suppression. So we are coming out at that piece of it as well.

Senator LEAHY. And as you know, I supported you when you formed that. Do you need further resources? Now here is your chance. It is not only—asking you, I am asking you as Chairman of the Committee, do you need further resources in this area?

Director WRAY. We are busier than we ever have been. And I can assure you that if the Congress sees fit to send us more resources on this, I can—I am quite confident that it will be put to good use.

Senator LEAHY. I thought that was probably so. My last question is on NICS, the national incident criminal background check. Last year, you processed nearly 40 million firearm background checks, only about 20 million so far this year. Congress provided you $179 million in emergency funding to help address the increased workload of gun background checks. How is that been utilized? Is it enough?

Director WRAY. So we have been able to put it to use and we are very grateful for it. Because of the uptick in the operational tempo out there to hire more personnel and to make system improvements, that funding was, as I recall, essentially a 2 year funding, which explains why we didn't have more of that in this budget request. But make no mistake, the pace that we are on, we will be needing more of that in the future for sure, because right now we are having to pull personnel from other critical functions to help out and do things like pay mandatory overtime just to be able to kind of triage the situation. So long term, we are absolutely going to need more resources, both for personnel out there and for systems improvements.

Senator LEAHY. Thank you. Thank you, Madam Chair.

Senator SHAHEEN. Thank you. Senator Capito.

Senator CAPITO. Thank you. Thank you, Director Wray. And thank you to all of your—those in the FBI. We thank them from the bottom our hearts for everything that they do every day. And I want to thank Chairman Leahy for teeing me up for this, because when you said out there, out there is in Clarksburg, West Virginia, where they run the background checks at—on the NICS system. And one of the statistics, Senator Leahy, said almost 20 million already this year, but we had the highest May ever of 3,222,105

background checks, which is an amazing—so I am happy to hear, and I want to be as supportive as we possibly can be through this Committee to help you with the resources that you need.

So I am going to ask a different question rather than tout what a great job they do out in Clarksburg, because we both know that. And we have heard about the rise in crime over the last 2 years, particularly this summer, seems to be particularly troublesome. What do you—do you correlate any of that with the rising number of firearm purchases? What—how do you all analyze that at the FBI, the rising number of background checks that are being performed in terms of purchases?

Director WRAY. Well, I don't know that we have been able to—settle on one specific factor, but certainly there have been a number of factors that drive, I think, the spike in violent crime. So COVID had a huge impact. You are talking about everything from trial backlogs, early releases, you know, unemployment, et cetera.

We have more juveniles committing violent crime and there is all kinds of challenges in our legal system for dealing with them. I mentioned response to, I think, Senator Graham's question, certain prosecution practices and decrease sentences. I think that has an effect. The prevalence of firearms in the wrong hands is certainly an issue as well, especially gun trafficking across State lines. And things like—these are all things that I think collectively contribute to the problem.

Senator CAPITO. Yes, I mean, I think the rise also is obviously, if you are going to legally purchase and go through a background check, it is probably in response to a rising criminal element for a defense. I mean, more people are feeling defenseless, more people are home more and feel like there may be making those purchases to protect them and their families. So I thank you for making sure those are getting safely into those hands. I want to talk about cyber-attacks. I asked the same question to Secretary Blinken and Attorney General Garland about ransomware. It is a particularly interesting to me because it is a semi-new phenomenon and none of it is—it is every article you read, it is not really sure or know how to handle it and what to do, and that it is a global issue as well.

And so I am interested to know if you are working with your global partners on how to address ransomware. And then you read from time to time what the different advice is. Pay the ransom, don't pay the ransom. Are you—how are you all addressing that? I mean, is that something that you—I don't know that you give advice, but you would, you know, for a large breach like the Colonial Pipeline, certainly have to be involved with that. And how you are seeing ransomware. We know it is going to get worse. And so I suppose that is why the cyber part of your budget is going to be increased, and that would be the area that you would look at the ransomware issue. Am I correct in assuming that?

Director WRAY. Certainly the part of the cyber enhancement request, ransomware, is a huge component of that. It is going to go to all the different kinds of cyber intrusions, or certain nations. You know, something like Solar Winds would also be the kind of thing that would be addressed through that enhancement. But ransomware, I think, has become particularly challenging because

we have seen the total volume of money paid, I think triple, you know, over the last year or so. Higher and higher ransoms, more sophisticated attacks.

We are talking about ransomware as a service, which the Colonial Pipeline case illustrated, where sophisticated developers of ransomware then basically outsource it to less sophisticated actors, which just expands the problem and the availability of the technique. And they are also now more and more engaging in sort of a mix of both the locking up of the system and the exfiltration and leaking or extortion that way as well. As far as guidance to victims, our guidance is, don't pay the ransom. But let me say this, I understand that it is a hard decision for a company or a municipal Government or whatever it happens to be the make. And the one thing that I think is most important by far is that whether they pay or don't pay, they get in touch with us right away early on. Because when they do, there is all kinds of things that we can do. In the Colonial Pipeline case, for example, we were, as has been reported, able to essentially seize and confiscate some of the ransom, a lot of the ransom and to hit the bad guys right where it hurts.

In other cases, it is not all the time, but it does happen, sometimes through other work we have done, we might have the decryption key and be able to help the company unlock their data without having to pay the ransom. Best of both worlds. So there is a lot of things we can do. But we can't do as much if we are not coordinated with early.

But our strategy has to be whole of Government working with the private sector, working with foreign partners, as you mentioned, because invariably these actors are overseas. Going after the actors, going after their helpers, going after their infrastructure, going after their money. So it is a comprehensive type of approach.

Senator CAPITO. Well, we want to be, again, as supportive as we can because this is a growing problem. Thank you.

Director WRAY. Thank you.

Senator SHAHEEN. Thank you. Senator Capito. Before I call on Senator Braun, we just had a vote called. My intent, unless someone else shows up for the subcommittee, is to go ahead and ask Senator Braun and Senator Kennedy for their questioning and then to end the hearing. So just so everybody understands where we are going. Senator Braun.

Senator BRAUN. Thank you, Madam Chair. In court submissions, the FBI has noted that it had—trouble. That is Okay. FBI had prior knowledge that there were going to—might be trouble on that day, and some of it was pretty stark. My question is, was there any plan that you were going to implement based upon that information being out there prior to what occurred on the 6? Was there a plan in place that you had ready to go should things unfurl the wrong way?

Director WRAY. Well, we had a couple of things. We had prepositioned tactical response unit, SWAT teams from the national capital region to be available, if called upon by our partners who are responsible for the security of the Capitol complex, or attacks elsewhere in the national capital region. Because we didn't have, as I said before, intelligence to my knowledge that indicated

that they were going to be hundreds and hundreds of people trying to storm and siege the Capitol. So we had prepositioned tactical resources. We had command posts that we stood up both in the Washington field office and at headquarters in our SIOC that we were running the day before to—and the purpose of those, the reason those are important because you have got all these other agencies and partners with people there too, and the idea is to make sure that everybody is getting the same information, you know, as quickly as possible, and that is the goal of that.

So those are some of the things that we were doing beforehand. And we, of course, had put out different kinds of intelligence products, essentially bulletins and things like that over the course of the year leading up to January 6. So those are a few of the things that we were doing.

Senator BRAUN. Did you share all that information with the Capitol Police along the way and especially leading up to when you started to see more traffic online?

Director WRAY. Well, I am not aware of any pertinent information we didn't share, but I know that we—these intelligence products I was listing, of course, those would have gone not just to the Capitol Police, but to MPD and all the other partners as well. The—to the extent that we had sort of late breaking raw information, there has been a lot of discussion about this information from our Norfolk Field office, that was something that we passed on to our partners, including and in particular the Capitol Police, in three different ways. Now, that was raw, unverified information.

But in the abundance of caution, we thought we would better get it to people as quickly as possible. And then this command post part of it is so important because that is where having been in these command posts, you know, every 30 minutes there is a briefing where every agency is quickly going through, here is what we are hearing, and here is what we are seeing. And they are all there and it is all being shared. And that is the point of it, to be able to do it in a nimble, agile, transparent way.

Senator BRAUN. And in retrospect, would you have done anything differently?

Director WRAY. Well, certainly we have now arrested, you know, close to 500, little over 500, if you include our partners, people. And so if we had known that those people were going to do what they did, there is all kinds of things we would have done differently. We are more broadly trying to look at, can we develop better sources to anticipate things like this? Can we develop better data analytics to deal with the deluge, the terabytes and terabytes of information to separate the wheat from the chaff, as it were? We are looking at the encryption issue because a lot of the communications between the domestic terrorists are happening through encrypted platforms that we don't have a ready-made lawful access solution to. And of course, we are going to be looking at how we review and evaluate open source information, you know, social media, that kind of thing.

Senator BRAUN. So does that mean you think it was maybe more spontaneous than planned? Or would you have—if it had been that obvious in terms of the planning of it, probably would have done more?

Director WRAY. Well, I think it is a little complicated to answer. The reason I say that is because you—in terms of the people committing crimes on January 6, you kind of have two buckets of people. You have one group of people who clearly committed crimes, including violence and destruction, in a more spontaneous way. But you also had some other people that we now know, we now know from investigative work we are doing after January 6, that were particularly bad actors who had infiltrated and were more organized among themselves. That is a smaller group. But they you know, they are the most dangerous ones.

Senator BRAUN. One final question. Capitol surrounded by a nonscalable fence. To me, in being here, obviously, ever since—day since then, hadn't seen any credible threats. You may know of more. Do you think that fence needs to remain up or can we take it down? Because to me, I think there needs to be a good argument that something is impending or likely or either it needs to come down not only for the look, but for the cost of it to boot. What is your recommendation?

Director WRAY. Yes, I am not sure I could really weigh in on that. I mean, we as I mentioned in response to one of the earlier questions, we really don't have expertise in static defense and physical security in that sense. So that is a question really better directed to the people who have that.

Senator BRAUN. And have you gotten any cues for any other impending incidents that might require you to keep it up? I mean, does the intel show that there is an imminent threat of anything, or does it show the opposite?

Director WRAY. Well, again, without reference to any fencing issue, I don't think, at least to my knowledge, we are not tracking any specific or credible threats to the Capitol.

Senator BRAUN. Sounds like a good reason to take the fence down. Thank you.

Senator SHAHEEN. Senator Coons.

Senator COONS. Thank you, Chairwoman Shaheen, Ranking Member Moran. FBI Director Wray, it is great to be with you again. And I just want to thank you and the 37,000 men and women of the FBI who do the hard and difficult and demanding work of keeping us safe each and every day. I am mindful always of the sacrifices of law enforcement at the Federal, State, and local level. And I join you in grieving the loss, the line of duty, death of special agent Daniel Alfin and Laura Schwartzenberger earlier this year. I am always conscious of the ways in which the safety of the men and women in law enforcement is one of the paramount concerns you carry day in and day out.

We also have an obligation to make sure that law enforcement is conducting itself in a way that is transparent and respectful and appropriate. And I am enthusiastic about the president's commitment to have Federal law enforcement now deployed with body worn cameras and look forward to hearing from you as that is implemented going forward. Back in March, when I think I last saw you, I asked for an assurance that the FBI as an organization would be as responsive as possible to requests from Members of the Judiciary Committee regarding outstanding requests for information.

Senator Whitehouse just spoke to this earlier this week. And he and I have requests that are now 2 years old and have gone without any response. Will you commit to working with us to get appropriate and responsive answers for these outstanding questions now from the last Congress?

Director WRAY. I am not tracking the specific piece of correspondence, but certainly I will have my staff follow up with yours and see how we can be more timely and helpful.

Senator COONS. Please, because it is something that, you know, I think has significantly agitated Senator Whitehouse and a number of other Members of the Judiciary Committee about responsiveness and transparency. And I would love to work with you to get this resolved. We have seen a spike in violent crime in a lot of places around the country. My hometown of Wilmington is one of them. The President speaking to this today.

And I think we need to ensure that Federal, State, and local law enforcement work collaboratively to address this uptick. The FBI can be particularly helpful by providing training and resources. The county police was associated with for a decade, nothing was more desired than a period at the FBI Academy, both as a professionalization tool and to build out a network of professional colleagues. How does the FBI plan to continue to strengthen partnerships with State and local law enforcement in cities like Wilmington and in counties like New Castle, Delaware?

Director WRAY. So I completely agree that partnerships are critical really across everything we do, but especially on violent crime. And in fact, one of my four pillars for the organization has been partnerships. And my message to our folks has been, we want every partner to be able to say there is no better partner than the FBI. Now, you mentioned a couple of ways in which we do that. The National Academy at Quantico, where we train sort of the stars of the future and sort of middle, upper middle management in State and local police departments that was something we are very proud of. It has been around for decades. It was stalled somewhat during the pandemic for obvious reasons.

But I am very excited that it is starting back up again soon, and we expect to be all in on that. Now, locally, we try to do it through task forces where we try to have our two, the FBI's two plus our partners to equal more than four, make it five, six, seven. And there have been some great examples of that, including in Wilmington. I know there was a gang, I think it was like the g-shine gang or something like that, where I think there were close to 40 arrests. But what was interesting, the reason I bring that one up is that during the pandemic, Federal grand juries were largely on hold in a lot of places, including in Delaware.

But our folks were able to basically take our investigative work, working with our State and local partners. And so most of the arrests ended up being local arrests, but with an FBI investigation to support them. So it is a great example of the point you are making.

Senator COONS. Well, I look forward to that continued partnership and to strengthening and deepening it. On the body worn cameras, the directive that they be deployed, ATF, FBI, DEA, marshals, I support—does your budget fully support that deployment

and implementation or do you need additional funding to fully implement that?

Director WRAY. It is a good question. We will need—right now the budget request that we have is geared not towards the FBI agents and body worn cameras, but towards our task force officers. And again, not the cameras themselves, but through all the pretty significant expense associated with the storage of the footage. On the FBI side we are—as you referenced, there is a phased in plan that includes a pilot in a couple of field offices for us. And then it will go from there. And we will certainly need, you know, potentially quite significant resources to be able to cover the costs for all of our personnel if not just the storage, but from their case, the cameras themselves.

Senator COONS. Well, I look forward to getting an updated request from you in that regard. When it comes to NICS background checks, last year there was a 40 percent increase in NICS background check requests compared to the previous year. That pace may simply increase again this year. And given the current rules, if the NICS system doesn't return a result within 3 days, buyers are permitted to proceed. Has the NICS been able to keep pace with this steadily increasing workload or are there more guns now being sold after a background check wasn't completed within that 3 day window? And are you planning to request increase resources for NICS?

Director WRAY. So the good news is that our workforce at NICS is extraordinary and very hard working. And even with the 40 million record breaking number of checks we had last year, they were still able to process 95 and 96 percent of the requests within the 3 days. But as you mentioned, the pace is increasing even this year. As far as whether we have enough resources for it, the supplemental that we got covered us for essentially 2 years in terms of increases, which is why we—you didn't see more of it in the 2022 budget request. But, but we absolutely will need more resources for NICS following that, because otherwise it is just a short term fix.

Senator COONS. My last question, Mr. Temporary——

Senator MORAN. Well, this is a question for Senator Kennedy, who was cut—was held the exact time in the other subcommittee. May I continue to recognize Senator Coons and then recognize you, Senator Kennedy?

Senator COONS. Last question with forbearance of Senator Kennedy. Deeply appreciated. I think all of us are concerned about steadily increasing efforts by China in espionage, in trade secret theft, and some of the ways in which we have seen both state, nonstate actors recently engaged in a variety of expensive, complex, and difficult attacks. Does the FBI need additional resources to protect the private entities who lack the resources to resist sophisticated State sponsored cyber-attacks?

Director WRAY. Well, we are essentially asking for more resources, a lot of it which would be going to that mission both through the counterintelligence enhancement that we requested and through our cyber enhancement. But there is no question that there is no counterintelligence threat greater than the threat posed by China, and we are opening a new, as I mentioned in my opening new investigation, every 12 hours, 10 to 12 hours. And it is about

a 13 percent economic espionage investigation increase over the last decade. And so this is a challenge that dwarfs in many ways the resources we have. So anything that the Congress can send our way to help with this will be put very much too good use.

Senator COONS. Well, thank you very much, Director. And thank you for your forbearance, Senator Moran and Senator Kennedy.

Senator MORAN. Senator Kennedy is recognized.

Senator KENNEDY. I am going to follow up, Mr. Director, on a point made by Senator Leahy. He talked about the massive voter suppression that he is expecting in 2022. Do your intelligence reports show they are going to be—there is going to be massive voter suppression in 2022?

Director WRAY. I don't believe I characterized the voter suppression threat as massive, and I am not aware of any intelligence assessment we have done that quantifies it. Certainly, voter suppression is a concern. It is something we investigate, something we pursue.

Senator KENNEDY. Okay. On the NICS database, where do you get—where do you get the information for?

Director WRAY. For the NICS database? So a lot of sources, but most of the information is coming from State and local law enforcement.

Senator KENNEDY. Are they all sending in all the information they are supposed to?

Director WRAY. We are continuing to improve that. The Fix NICS Act that Congress put in place has been a big help in that regard. And every year we are increasing the completeness of the NICS database. But there is still room for improvement.

Senator KENNEDY. But there is still a lot of holes in it, aren't there?

Director WRAY. There are, yes.

Senator KENNEDY. Yes. And the truth is, I mean, for some I don't want to paint with too broad a brush, but my understanding is that for some at the State and local level, it is just not a priority. It is not that they are sitting around watching Netflix. They just have got—they are busy doing other stuff. Would that be a fair statement?

Director WRAY. Well, I understand why you would describe it that way. I have got to be a little bit careful to characterize our partners as, you know, distracted. But I will say that, I mean, I have gone out to NICS and put on the headset and sat there with the operator, listen to the calls and see how it works. And, you know, some of these things, especially when you start getting into, you know, misdemeanor, domestic violence offenses, and things like that, it can get kind of complicated.

And if the records out in whatever jurisdiction aren't ready at hand or clear, it can become a real challenge. And that was magnified during the pandemic, you know, because a lot of departments, local departments, you know, were not at work. And so that——

Senator KENNEDY. Well, I just—I hear—I read about the President and others saying, well, the problem is we need to expand background checks. And it just seems to me that a big part of our problem, nothing is perfect, of course, but a big part of our problem

is that the current system we have is only as good as the information inputted and all the information isn't being inputted. It is just not. And I think Fix NICS did help. And I think it is better, but I don't think it is well. And it would seem to me that that would be a logical place to start. Is my thinking faulty?

Director WRAY. I don't think your thinking is faulty. I think we all share the goal of keeping guns out of the hands of those illegally prohibited from having them, which should be the table stakes in this endeavor. And that is what the NICS system is designed to do. To the extent that the holes that you identified are holes in different agencies and departments, you know, a patchwork around the country, you know, I would be remiss if I didn't point out that some of them may need, you know, grant funding or resources to help them because it may be a resource issue for them.

Senator KENNEDY. I am not suggesting they are just sitting around watching Netflix. They are working. They have been 'cussed and discussed and accused of everything in the world, and their budgets has been cut. And then we wonder why crime goes up. So I am not criticizing them. I am just pointing out that it seems to me that the system is only good as the data that is been put into it. Let me ask you a final question. I just want your opinion on this. Why do you think Chicago has become the largest outdoor shooting range in the world?

Director WRAY. Well, I mean, I think I have referenced a lot of the factors from a national perspective. I don't know that I can sit here right now give you a Chicago specific explanation, but certainly some of the same trends that I described nationally would undoubtedly be at play in Chicago. I know that, you know, over the past year, we have had, you know—this is just the FBI now, you know, 270 gang arrests in Chicago, 150 maybe violent crime arrests. And that is just in the past year or so. And I know that our partners there. We have some great partners in Chicago, you know, police department, among other agencies, and they are all stretched pretty thin.

Senator KENNEDY. Thank you, Mr. Director.

ADDITIONAL COMMITTEE QUESTIONS

Senator MORAN. Senator Kennedy, thank you. If there is no further questions to be asked this afternoon, Senators have until June the 29 to submit additional questions for the subcommittee's official hearing record. We request that the FBI respond within 30 days. The subcommittee stands in recess.

[The following questions were not asked at the hearing, but were submitted to the Federal Bureau of Investigation for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. CHRISTOPHER WRAY

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

Question 1. Last fall, Vermont was the first State to pass a bill that prohibits police from using facial recognition technology without the express consent of the legislature. I am proud of Vermont for leading the way on guarding Vermonters' civil liberties against this often inaccurate technology. Body worn cameras with facial recognition technology create such a significant risk of misidentification that even body camera vendors are shifting away from this technology. The FBI's fiscal year

2022 budget includes $6.2 million to provide software and video storage for body worn cameras of federally deputized Task Force Officers.

a. Does the FBI utilize body worn cameras with built-in facial recognition technology? What concrete steps will the FBI take to protect Americans' civil liberties from widely known risks of misidentification by facial recognition technology?

Answer. The FBI's body worn cameras, currently implemented in one field office, do not have any facial recognition technology.

b. How does the FBI plan to safeguard stored body camera footage from improper access and use?

Answer. The storage environment for BWC metadata and recordings will be encrypted in transition and at rest. The FBI's storage environment will be governed and validated automatically by the Sentinel case authentication services REST Application Programming Interface. Files will contain a refence to the unique hash value of the contents for every recording. The Department of Justice will soon release additional information and guidance regarding the use of body worn cameras.

Question 2. When I asked you whether additional resources from Congress to combat voter suppression and other Federal election crimes would be helpful, you responded that "we're busier than we ever have been" and that "if Congress sees fit to send us more resources on this . . . I'm quite confident that it will be put to good use."

a. What is your assessment for why the FBI is busier than it has ever been with respect to combatting Federal election crimes? Has there been a significant uptick in alleged Federal election crimes? Is there a discernible pattern regarding who exactly are allegedly committing these crimes—for example, State level officials?

Answer. The FBI is the primary agency responsible for investigating illegal cyber activity against election infrastructure, malign foreign influence operations, and election-related crimes, like voter fraud and voter suppression or intimidation. At the FBI, we work closely with our intelligence community partners, as well as other Federal, State, local, Tribal, and territorial partners, to share information, bolster security, and identify and disrupt any threats.

Because of the expanded foreign influence operations we have witnessed, we broadened and significantly added resources to our Foreign Intelligence Task Force (FITF) and not just to efforts related to Russia, but also to add China and Iran, because those countries are looking for different ways to take a page out of the malign foreign influence playbook that they've seen elsewhere.

At the State and local level, the FBI has Election Crimes Coordinators (ECCs) in each field office to assess allegations of voter fraud, civil rights violations, campaign finance crimes, and other potential threats to primaries and general elections. The FBI worked closely throughout the 2020 electoral process with local and State officials, public representatives, and USIC partners to educate, prepare, and facilitate a whole-of-society response to any and all election-related matters.

b. If Congress is able to provide you with additional resources to combat Federal election crimes, what exactly would those resources be utilized for? Please list the key areas of the FBI's efforts combatting Federal election crimes that could be bolstered or expanded given additional resources from Congress.

Answer. The FBI, along with its Federal, State, local, Tribal, territorial, non-governmental and private-sector partners nationwide, work together in unprecedented ways to combat foreign interference efforts and support election officials, political organizations, campaigns, and candidates in safeguarding their infrastructure. Certainly, additional resources would support these efforts.

In an effort to increase the FBI's ability to identify, initiate, and investigate election crime matters, the FBI established the Campaign Finance and Ballot Fraud Initiative. This initiative designated Special Agents as Election Crimes Coordinators in each FBI field office and also assigned intelligence personnel to support efforts to combat these crimes. These personnel are the points of contact for all election-related issues within the agency, including those related to public corruption, civil rights, cyber crimes, and terrorism incidents, and they liaise as necessary with State and local election officials, State/local law enforcement agencies, and the U.S. Attorney's Offices.

As performed in the lead-up to the 2020 election, the FBI investigates so-called "dark money" schemes, through which donors to political spending or campaign con-

tributions by groups are not disclosed and the source of the contributions are unknown. Many times, these dark money groups are used to mask illegal activities such as foreign contributions, bribes, or quid pro quo arrangements. The FBI will also continue to investigate instances of voter and ballot fraud, voter intimidation/suppression, cyber hacks, and PAC/Super PAC violations.

In addition, in the fall of 2017, the FBI established the Foreign Influence Task Force (FITF) to identify and counteract malign foreign influence operations targeting the U.S. The FITF is led by the Counterintelligence Division and is comprised of agents, analysts, and professional staff from the Counterintelligence, Cyber, Counterterrorism, and Criminal Investigative Divisions. This cross-programmatic approach allows the FBI to identify connections across programs, to aggressively investigate as appropriate and—importantly—to be more agile. Coordinating closely with our partners and leveraging relationships we have developed in the technology sector, we regularly relay threat indicators that those companies use to take swift action, blocking budding abuse of their online platforms. Following the 2018 midterm elections, we reviewed the threat and the effectiveness of our coordination and outreach. As a result of this review, we further expanded the scope of the FITF to confront foreign malign operations not only of Russia, but also of the People's Republic of China (PRC), Iran, and other global adversaries.

Question 3. We are fewer than 3 months away from the 20th Anniversary of the September 11 attacks, and yet there is still hidden information about that horrific day that the American people deserve to know. Appearing before the House Judiciary Committee two weeks ago, you committed to working with the Director of National Intelligence to ensure greater declassification of documents related to Saudi Arabia's involvement in the September 11 attacks.

a. Is that conversation ongoing? When can we expect to see a full declassification review of all aspects of the FBI's investigation into Saudi Arabia's role in 9/11?

Answer. The FBI recognizes the public importance of documents related to 9/11 and we have worked diligently to produce over 10,000 pages of related records.

The FBI, Department of Justice, and other agencies continue to work to satisfy the requirements of Executive Order 14040. Pursuant to the Executive Order, since September 11, 2021, the FBI has released newly declassified documents related to the attacks, including releases on September 11, 2021, November 3, 2021, December 30, 2021, and March 2, 2022.

Question 4. During previous appearances before Congress, you mentioned that end-to-end encryption across devices and social media platforms threatens the FBI's ability to manage threats, particularly when it comes to domestic terrorism. You suggested that you believed that this was a policy judgement Congress should make but that instead it was being made by private companies.

a. Please describe, as specifically as possible, the biggest issues related to end-to-end encryption from the FBI's perspective that you believe this Committee should be aware of when considering the balancing of civil liberties with law enforcement surveillance.

Answer. The FBI remains a strong advocate for the wide and consistent use of responsibly-managed encryption—encryption that providers can decrypt and provide to law enforcement when served with a legal order. Protecting data and privacy in a digitally connected world is a top priority for the FBI and the U.S. Government, and we believe that promoting encryption is a vital part of that mission. But we have seen that the broad application of end-to-end and user-only-access encryption adds negligible security advantages. What we mean when we talk about lawful access is putting providers who manage encrypted data in a position to decrypt it and provide it to us in response to legal process. We are not asking for, and do not want, any "backdoor," that is, for encryption to be weakened or compromised so that it can be defeated from the outside by law enforcement or anyone else. Unfortunately, too much of the debate over lawful access has revolved around discussions of this "backdoor" straw man instead of what we really want and need.

The FBI is deeply concerned with the threat that end-to-end encryption (E2EE) and user-only-access encryption pose to our ability to fulfill the FBI's duty of protecting the American people from every manner of Federal crime, from cyber-attacks and violence against children to drug trafficking and organized crime. Even with our substantial resources, accessing the content of known or suspected terrorists' data pursuant to court-authorized legal process is increasingly difficult. The often-online nature of the terrorist radicalization process, along with the insular nature of most of today's attack plotters, leaves fewer dots for investigators to connect in time to

stop an attack—and end-to-end and user-only-access encryption increasingly hide even those often precious few and fleeting dots.

This problem spans international and domestic terrorism threats. We face the same problem in protecting children against violent sexual exploitation. End-to-end and user-only-access encryption frequently prevent us from discovering and searching for victims. When we are able to open investigations, end-to-end and user-only-access encryption makes it much more difficult to bring perpetrators to justice. If we cannot obtain that critical electronic evidence, our efforts are frequently hamstrung.

This problem is not limited just to Federal investigations. Our State and local law enforcement partners have been consistently advising the FBI that they, too, are experiencing similar end-to-end and user-only-access encryption challenges, which are now being felt across the full range of State and local criminal law enforcement. As this problem becomes more and more acute for State and local law enforcement, the advanced technical resources needed to address even a single investigation involving end-to-end and user-only-access encryption will continue to diminish and ultimately overwhelm State and local capacity to investigate even common crimes.

Question 5. In 2020, the National Center for Missing and Exploited Children's (NCMEC) CyberTipline received more than 21.7 million reports regarding online exploitation of children—almost 4 million more reports than in 2019. NCMEC also received almost twice as many reports in 2020 of online enticement of children than it did in 2019.

a. Please describe, in as much detail as possible, the steps the FBI is taking to combat this disturbing rise in the exploitation of children online, particularly on social media and online gaming platforms.

Answer. The FBI's Crimes Against Children and Human Trafficking program provides rapid, proactive, and intelligence driven investigative response to the abuse to, and exploitation of, children when those crimes fall under the authority of the FBI. Currently, the FBI leads 86 Child Exploitation and Human Trafficking Task Forces across the Nation, which focus on investigating and prosecuting crimes against children in partnership with Federal, State, local, and Tribal counterparts. The FBI also works with non-governmental entities such as Thorn and NCMEC to identify emerging technologies used by child sex offenders.

Over the past 2 years, the FBI has remained focused on protecting children from exploitation and abuse in all forms, from interactions on a social media platform to hands-on abuse by a trusted adult. In fiscal year 2020 and fiscal year 2021, the FBI arrested over 4,100 child sex offenders (over 1,650 of whom were contact offenders) and located over 320 missing or abducted children. The FBI also partnered with international law enforcement, including INTERPOL and EUROPOL, to identify child predators around the world and bring them to justice.

b. Please describe the resources the FBI is providing to educate parents about the issue and to help prevent their children from online exploitation, particularly with more children online during the pandemic.

Answer. The FBI collaborates with domestic and foreign law enforcement agency partners, as well as several non-governmental organizations, to identify and address the effects of the COVID–19 pandemic on child sexual exploitation tradecraft and online victimization. For example, since December 2019, the FBI's Criminal Investigative Division (CID) has released five public service announcements (PSAs) to warn parents, educators, caregivers, and children about the dangers of online CSE and the signs of child abuse. Specifically, the PSAs included recommendations on how to safeguard children from sexual exploitation the dangers of sextortion and online extortion, the risks posed by online video games, and how to report victimization. The FBI also provides information about online risks and resources to parents and children, such as the Safe Online Surfing Internet Challenge (https://www.fbi.gov/fbi-kids) and the information available at https://www.fbi.gov/scams-and-safety/protecting-your-kids.

c. Does the FBI have all of the resources it needs as part of this program to meet this growing challenge?

Answer. As the Committee is aware, every year, thousands of children become victims of crimes—whether it is through online predators, sexual abuse, violent attacks, human trafficking, or kidnappings. The FBI is uniquely positioned to work with Federal, State, local, Tribal, and international law enforcement partners to identify, investigate, and deter individuals and criminal networks from exploiting children. These partnerships are essential because the number of violent crimes against children is far greater than what the FBI is resourced to address on its own.

The FBI has several programs in place to arrest child predators and to recover missing and endangered children. To this end, the FBI funds or participates in a variety of endeavors, including our Innocence Lost National Initiative, the Innocent Images National Initiative, the 85 Child Exploitation Task Forces, and the Violent Crimes Against Children International Task Force, which comprises 69 officers from 48 countries. The FBI also works with non-governmental organizations like Thorn and NCMEC, as well as numerous community outreach programs, to educate parents and children about safety measures they can follow.

Finally, the FBI also leverages the Child Abduction Rapid Deployment (CARD) Teams, which are rapid-response teams stationed across the country to quickly respond to abductions (including abductions where the victim met their abductor online). Investigators bring to this issue the full array of forensic tools, such as call data and cell tower data analysis, behavior analysis, cellular DNA analysis, trace evidence, impression evidence, and digital forensics. Through improved communications, law enforcement also has the ability to quickly share information with partners throughout the world, and these outreach programs play an integral role in prevention.

Employing these tools is expensive but successful. The FBI makes every effort to ensure that resources are used efficiently, while safeguarding endangered children. The FBI commends the committee's dedication to these efforts and appreciates the resources provided to combat these horrific acts.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

Question 1. Will you share the specific duties and responsibilities of the FBI's Chief Diversity Officer with my office?

Answer. In April 2021, Director Wray formally appointed Scott McMillion as the FBI's first-ever Chief Diversity Officer. Mr. McMillion leads the Office of Diversity and Inclusion (ODI), which the FBI established in 2012. As part of its mission, ODI oversees our nine Diversity Advisory Committees, which advocate for underrepresented groups within the workforce. The efforts of these groups have culminated in policy changes, innovative projects, and a deeper sense of community for minorities, women, and others within the FBI. ODI also works to ensure that diversity, equity, and inclusion are key components in recruitment, hiring, retention, and promotion efforts as well as other processes and programs within the FBI.

Question 2. Is there a reason the Chief Diversity Officer does not report to you directly but reports to an executive two levels below you?

Answer. Director Wray has named Building a High-Performing, Diverse, and Inclusive Workforce as one of his three Director's Priority Initiatives and, as referenced above, Director Wray formally appointed the FBI's first-ever Chief Diversity Officer. The CDO position is among the FBI's senior leadership, which provides direction and support to all 56 field offices, about 350 resident agencies, several specialized field installations, and more than 60 legal attachés in other countries.

QUESTIONS SUBMITTED BY SENATOR LISA MURKOWSKI

Question 1. We know from the little data available, that Alaska has one of the highest rates of human trafficking in the country, specifically affecting our homeless youth and Alaska Native population. I am grateful to the phenomenal agents at the FBI field office in Anchorage who have been providing training and outreach on this issue in Alaska. However, throughout the State there is still a great need for comprehensive training and resources on human trafficking in our communities. The FBI is an ideal stakeholder with the correct expertise to provide this training.

a. What additional funding has the Department of Justice proposed for the FBI to increase access to training for rural communities on human trafficking?

Answer. The FBI defers to the Department of Justice on proposed funding increases; however, the FBI has realigned existing resources specifically to address human trafficking and missing and murdered indigenous persons (MMIP) in Alaska. In addition, the FBI provides between 12–24 training venues on human trafficking and MMIP. The FBI also offers access to several national-level conferences, including the DOJ-sponsored National Law Enforcement Training on Child Exploitation and the Dallas Crimes Against Children Conference, and access to virtual webinars covering topics related to human trafficking. In addition, in 2020, the U.S. Attorney's Office stood up the Alaska MMIP Working Group to address the complexities

that arise in these types of cases in Alaska. The group is a multi-disciplinary team involving the collaboration and coordination of Tribal representatives, Federal, State, local and Tribal law enforcement, and social and victim service providers.

In January 2022, the Department of Justice issued its National Strategy to Combat Human Trafficking. This document is available online at https://www.justice.gov/opa/press-release/file/1467431/download. The strategy is a Department-wide effort that lays out a multi-year plan to combat all forms of human trafficking. Chapter I of the strategy identifies strategies for detecting human trafficking crimes and identifying victims and survivors. Additional chapters address topics like protection, prosecution, and prevention. Each chapter identifies numerous concrete actions intended to be executed within approximately 1 year. Training is a key part of the strategy, and it includes training efforts in rural and Tribal communities.

The FBI has been very open to surging resources to various parts of the country to address emerging threats and will continue to do so.

b. We know that survivors of human trafficking need specialized services to enter recovery. What additional funding has the Department of Justice proposed to support victim specialists within the FBI, who are able to connect survivors of human trafficking to vital services in the community?

Answer. The FBI defers to the Department of Justice on specific funding requests; however, the FBI takes a victim-centered, trauma-informed approach to investigating these cases and strives to ensure that the needs of victims are fully addressed at all stages. To accomplish this, the FBI works in conjunction with other law enforcement agencies and victim specialists on the local, State, Tribal, and Federal levels, as well as with a variety of vetted non-governmental organizations. Even after the arrest and conviction of human traffickers, the FBI often continues to work with partner agencies and organizations to assist victims in moving beyond their exploitation.

Question 2. In April 2021, the FBI executed a search warrant on the home and business of a couple living in Homer, Alaska. This search warrant was related to investigations surrounding January 6. We know that the wife was identified using pictures and tips. The couple is adamant that this was a case of mistaken identity. I think it is important that we get all of the answers about what happened on January 6, and I am supportive of the FBI in their efforts. At the same time, we are also in a moment where public trust in law enforcement is fragile and under heavy scrutiny.

a. How is the FBI working to ensure that investigations respect the constitutional rights of Americans?

Answer. The FBI has the dual mission of protecting the American people and upholding the Constitution. The FBI is committed to protecting Constitutional rights, including the First Amendment's freedoms of association and assembly. The Attorney General's Guidelines for Domestic FBI Activities (AGG–DOM) establish a set of basic principles that serve as the foundation for all FBI mission-related activities.

As described in the relevant, unsealed, and redacted search warrant affidavit, the search that took place in Homer, Alaska, is related to one or more of the hundreds of investigations related to the January 6, 2021, attack on the U.S. Capitol. Although the search warrant affidavit has been unsealed, pursuant to longstanding Department of Justice and FBI policy and practice, the FBI cannot provide further information or discuss an open investigation. This policy, which has been applied across administrations, is designed to preserve the integrity of all FBI investigations and the privacy of individuals or entities potentially involved in an investigation.

b. What efforts has the FBI taken to ensure that that public trust in law enforcement is maintained during the course of the investigations into the events of January 6?

Answer. The FBI has deployed our full investigative resources and is working closely with our Federal, State, local, Tribal, and territorial partners to aggressively pursue those involved in criminal activity during the events of January 6, 2021. FBI special agents, intelligence analysts, and professional staff have been hard at work gathering evidence, sharing intelligence, and working with Federal prosecutors to bring charges against the individuals involved.

We used tip lines and web resources for members of the public to provide information to assist in identifying individuals who were involved in the violence and other criminal activity. These resources allowed the public to submit any images, videos, or other multimedia files related to possible violations of Federal law. The FBI has

arrested hundreds of individuals with regards to rioting, assault on a Federal officer, property crimes violations, conspiracy, and other charges.

The FBI has the dual mission of protecting the American people and upholding the Constitution. It is important to emphasize that we investigate and prosecute individuals for their criminal acts, not for their beliefs or based on their associations. We respect the Constitutional rights of freedom of speech, association, and assembly of all Americans. We open cases based on suspected criminal violations, not ideologies, and hold sacred the rights of individuals to peacefully exercise their First Amendment freedoms. The FBI may not, and does not, open investigations solely on the basis of First Amendment-protected activity.

Question 3. In recent weeks, there has been a dramatic increase in the number of reported anti-Semitic incidents across the United States. The Anti-Defamation Leagues' Center on Extremism reported that the number of anti-Semitic incidents in the U.S. for the month of May increased by 115 percent over the number of reports for May of last year. These reported incidents varied from assault to vandalism. The Alaska Jewish Museum in Anchorage, Alaska was also vandalized in late May. A man was reported placing swastika stickers which said the words "We are everywhere" in bold, black letters. There is absolutely zero place for this kind of hatred in Alaska or anywhere else in the United States. The FBI has reported that one of the greatest threats to the Homeland today is from domestic violent extremists (DVEs) and homegrown violent extremists (HVEs). We know that DVEs and HVEs have and likely will continue to pose a very real threat to the Jewish Community.

a. What efforts is the FBI taking to address the rise in antisemitism?

Answer. To address the intersection of the FBI counterterrorism and criminal investigative missions to combat domestic terrorism, and to provide justice to those who are victims of hate crimes, the FBI formally created the Domestic Terrorism-Hate Crimes Fusion Cell in April 2019. This Fusion Cell creates more opportunities for investigative creativity, provides multi-program coordination, helps ensure seamless information-sharing, and enhances investigative resources to combine the domestic terrorism (DT) threat. The Fusion Cell has already been helpful in the FBI's efforts to address the rise in antisemitism. For example, in November 2019, the work of the Fusion Cell resulted in the arrest of Richard Holzer, a Colorado man who ultimately pleaded guilty and was sentenced to over 19 years in prison for Federal hate crime and explosives charges for plotting to blow up a synagogue in Pueblo, Colorado.

b. How does the FBI's fiscal year 2022 budget address these and other hate crimes, such as the ones perpetrated against Asian Americans?

Answer. The FBI's fiscal year 2022 request includes resources to help counter the increasing acts of domestic terrorism occurring across the United States. To do this, the FBI has developed advanced methods to detect, prevent, and disrupt threats using human resources, information, and technology. Specifically, resources requested in the fiscal year 2022 budget will be used to: increase the FBI's investigative capacity to combat domestic terrorism threats; implement technical tools to better screen and analyze threats; and enhance the National Threat Operations Center's ability to intake threats from the public. These capabilities will help the FBI protect against all domestic terrorism threats, including those perpetrated against the Jewish and Asian American communities.

With respect to civil rights and hate crimes, the fiscal year 2022 request sustains FBI resources, including the Domestic Terrorism Hate Crimes Fusion Cell. During fiscal year 2020 and fiscal year 2021, the FBI conducted training and liaison events for the Asian American Pacific Islander (AAPI) community and plans to continue to communicate potential threats and encourage reporting of potential hate crimes.

QUESTIONS SUBMITTED BY SENATOR JOE MANCHIN, III

Question 1. We have spoken several times regarding the FBI police, and I would like to touch on this again to demonstrate the importance of it to my State. First, I want to highlight the exemplary work of the 75 police officers assigned to the site in Clarksburg, West Virginia and the 173 other officers serving at sites in Washington, DC, Quantico, VA, and New York City. As you know, because of an inadvertent error committed while drafting the legislation, the FBI police force are not receiving the pay and benefits in which they are entitled. As a result, turnover is high, as officers tend to leave the force for other better-paying jobs with other agencies once they receive the proper training and security clearances. I know the FBI

is has started a working group to address the issue, but I would like to, once again, receive your commitment to working on this in a timely manner as more and more FBI Police leave the force due to pay and benefit deficiencies.

a. Can you give me a status update on the work of the working group on the FBI Police pay and benefit issue?
b. When do you believe the working group's work on the issue will be completed?

Answer. The FBI continues to evaluate the needs of FBI Police and will continue to work with the Department of Justice, the Office of Management and Budget, the Office of Personnel Management, and Congress as it assesses possible actions to address identified needs. We appreciate Congress' shared interest in FBI Police human capital and resourcing needs.

Question 2. Intelligence reports prior to the January 6 riot warned Capitol Police that supporters of President Trump were actively promoting violence and targeting Congress itself. The Department of Homeland Security specifically notified Capitol Police that they had identified a map of the Capitol's tunnel system in online messages between "Stop the Steal" supporters, and the FBI field office in Norfolk also warned the Capitol Police. However, the Capitol Police Inspector General also found a lack of consensus among key official about whether these reports indicated specific known threats. As you know it's impossible to prepare or respond to a threat without as much reliable information as possible, and we certainly saw what happens when threat information isn't handled effectively on January 6th. This brings up a larger issue that I've grown more concerned about during my time on the Cyber Subcommittee for Armed Services. Which is how potential threats, both physical and cyber, are shared within the Federal Government.

a. In your capacity, do you feel both your Bureau has been sufficiently receiving and relaying threat information with other Federal departments, and are you aware if that information can then be shared with a specific private industry partner if we identify a specific threat toward them?

Answer. The FBI's intelligence operations span our field offices and Headquarters divisions, and we work closely with our partners in the intelligence, law enforcement, private sector, and academic communities through, for example, the JTTFs and the Domestic Terrorism-Hate Crimes Fusion Cell, described above. In addition, the FBI's Office of Private Sector exists to enhance the FBI's understanding of the private sector's risks and needs, increases collaboration and information-sharing between the Bureau and the private sector, and mitigates threats through longstanding, mutually beneficial partnerships between the private sector and the FBI.

Throughout 2020, the FBI authored approximately 12 intelligence products for our Federal, State, local, Tribal, and territorial law enforcement partners disseminating trends we saw in threat reporting and criminal activity involving domestic violent extremism. Over the preceding year, we observed activity that led us to assess that there was potential for increased violent extremist activity at lawful protests taking place in communities across the United States. Accordingly, in June 2020, we, with our partners at the Department of Homeland Security (DHS), issued two separate joint intelligence bulletins highlighting the potential for increased violent extremist activity at such demonstrations and noting that likely targets would include law enforcement and government personnel. More recently, in late August 2020, we published an analytical report informing our partners that DVEs with partisan political grievances likely posed an increased threat related to the 2020 election. In that product, we noted that DVE responses to the election outcome might not occur until after the election and could be based on potential or anticipated policy changes. In December 2020, we contributed to a DHS Intelligence In-Depth product, which advised our partners that the threat posed by the diverse DVE landscape would probably persist due to enduring grievances.

In the weeks and months leading up to electoral certification, the FBI collected and shared intelligence; coordinated and communicated among Federal, State, and local law enforcement partners; and positioned Federal resources for potential deployment. Through these measures, the FBI worked in close coordination with the U.S. Capitol Police, the Metropolitan Police Department of Washington D.C., and other law enforcement partners leading up to the Joint Session of Congress and the planned demonstrations scheduled for January 6, 2021. The FBI and our Federal, State, and local partners collected and shared intelligence and relevant public safety-related information in preparation for the various planned events.

b. In your own opinion how do we increase the coordination within the Federal Government to respond more quickly and in a uniformed way no matter the threat?

Answer. As a member of both the law enforcement and intelligence communities, with domestic and international reach, the FBI is focusing our unique authorities, and our ability to engage with international law enforcement, domestic victims, and key technology service providers, to identify and disrupt cyber adversaries before they compromise U.S. networks, and hold them accountable when they do.

Key to the FBI's strategy is using the information and insight we develop through our investigations to support our full range of public and private-sector partners. There are many countries, companies, and agencies that play roles in defending networks, sanctioning destabilizing behavior, collecting cyber threat intelligence, and conducting cyber effects operations. We seek to work with all of them, in the belief that our collective actions to combat cyber threats are most impactful when they are planned jointly and sequenced for maximum impact.

The National Cyber Investigative Joint Task Force (NCIJTF) is comprised of over 30 partnering agencies—from across law enforcement, the intelligence community, and the Department of Defense—and has the primary responsibility to coordinate, integrate, and share information in support of cyber threat investigations; supply and support intelligence analysis for community decision-makers; and provide value to other ongoing efforts in the fight against cyber threats to the Nation. In coordination with our partners, the FBI has successfully disrupted numerous cybercriminal enterprises, including those deploying ransomware, but lasting impact will require joint, sequenced operations with our U.S. counterparts and foreign allies as well as a removal of the sense of impunity many of these actors currently feel.

On the front lines of our efforts to investigate and prosecute domestic and international terrorism are the FBI-led Joint Terrorism Task Forces (JTTFs) and the department's 94 U.S. Attorney's Offices. JTTFs provide an essential hub for cooperating on both international and domestic terrorism matters across all levels of government nationwide. The FBI has established JTTFs across all 56 FBI field offices, which leverage enduring partnerships with Federal and State, local, Tribal, and territorial agencies to detect, identify, and disrupt terrorist threats. Each U.S. attorney's office also coordinates a group of Federal, State, local, Tribal, and territorial officials in each district, referred to as an Anti-Terrorism Advisory Council (ATAC). The ATACs work in close partnership with corresponding JTTFs to promote training and information sharing among Federal, State, local, Tribal, territorial, and private sector partners in both international and domestic terrorism matters. This training and information sharing is critical because there are many more State, local, Tribal, and territorial law enforcement officers on the ground than there are Federal agents, and they may be the first to come across individuals planning terrorist acts within their communities. Federal and State, local, Tribal, and territorial officials often evaluate these threats together, including assessing whether Federal or State charges are available to disrupt them, with the goal of preventing terrorist attacks before they occur.

Question 3. I've heard from numerous government officials at the Department of Defense, DHS, and even at the FBI and they all have said that Cyber criminals are getting smarter and using more and more elaborate scheme to steal information to steal and extort millions of dollars from individuals and companies. In fact, the FBI's 2020 Internet Crime Report includes information from 791,790 complaints of suspected Internet crime—an increase of more than 300,000 complaints from 2019—and reported losses exceeding $4.2 billion. As you know, Russia in the SolarWinds hack and China in the Microsoft hack, both launched their attacks from, and infiltrated stolen data through servers rented from U.S. cloud providers. In May, Colonial Pipeline was the victim of a ransomware attack that placed large parts of its infrastructure out of operation. Colonial Pipeline paid a ransom demand for approximately 75 bitcoins. Fortunately, the Department of Justice just announced that it had seized 63.7 bitcoins, valued at approximately $2.3 million, which represented a portion of the ransom payment made by Colonial Pipeline to individuals in a group known as DarkSide. There is no doubt that these types of cyberattacks and ransom demands will be the new normal going forward and I hope that we, as the U.S. Government, are prepared to put the right mechanisms in place to detect and pursue individuals, groups and nations that that strive to infiltrate and disrupt our Federal systems and critical infrastructure.

a. How extensive are cybercrimes here in the United States?

Answer. Ransomware is a growing threat to the health and safety of the American people and our national and economic security. The individuals who conduct cyber

intrusions and ransomware campaigns, and the officials who direct or harbor them, believe that they can compromise U.S. networks, steal our financial and intellectual property, and hold our critical infrastructure hostage for ransom, all without incurring significant risk themselves.

In 2020, the FBI's Internet Crime Complaint Center (IC3) statistics showed a 20 percent increase in reported ransomware incidents and a 225 percent increase in ransom amounts. In 2019, the IC3 received 2,047 ransomware complaints, with adjusted losses of more than $8.9 million— though that is likely a small fraction of the true scope of the threat because it captures only those who individually reported to the IC3. These numbers represent a nearly 40 percent increase in ransomware complaints to the IC3, and more than double the adjusted losses reported in 2018. In 2020, the IC3 received 2,474 complaints identified as ransomware, with adjusted losses of over $29.1 million. Unfortunately, what is reported is only a fraction of the incidents that occur.

Because this criminal activity has become more lucrative and enticing, it is our job to make it harder and more painful for hackers to do what they are doing. That is why we announced a new FBI cyber strategy last year, using our role as the lead Federal agency with law enforcement and intelligence responsibilities to not only pursue our own actions, but to work seamlessly with our domestic and international partners to defend their networks, attribute malicious activity, sanction bad behavior, and take the fight to our adversaries overseas.

b. What are some of the biggest challenges in investigating and prosecuting cybercrimes?

Answer. Cyber criminals focus on exploiting technical vulnerabilities, primarily for personal profit. Overall, the sophistication of cyber-crime has increased and has become more difficult to detect, more resilient, costly to disrupt, aggressive, and destructive. We know our most significant threats come from foreign actors using global infrastructure to compromise U.S. networks. By working with friendly foreign law enforcement agencies and intelligence partners, we make it harder for these actors to conceal their activities and whereabouts.

Not every foreign nation helps us in this fight. While we seek to disrupt entire cybercriminal enterprises, the most impactful consequence we can impose on a malicious cyber actor is an arrest as part of a comprehensive disruption. If an actor is in a country like Russia or China, an arrest for purposes of facing U.S. charges is not a viable option. Neither country extradites its nationals. Even when an indicted cybercriminal is in another country, Russia in particular takes actions to interfere with our extraditions. To make things more difficult, the lines between nation-states and cybercriminal actors are sometimes blurred, and even though a foreign nation may not be directing a ransomware campaign, it may still be complicit by providing a safe haven to those malicious actors who are doing harm to the United States, our citizens, and our businesses.

But our allies outnumber our foes, and in just the past few months, our work with foreign partners—supported by our legal attaches overseas—has led to impactful consequences against cybercriminals and sent a strong message that the reach of the U.S. Government extends beyond its borders.

c. Does the FBI have sufficient authorities and resources to successfully pursue cybercrimes?

Answer. There are several areas in which the FBI must invest now and continue to invest in the future to ensure we can keep pace with the terrorists, foreign intelligence officers, and criminals we face each day. One of these key areas of focus is cyber. The depth and breadth of the cyber threat has expanded exponentially in the past decade; this phenomenon will continue into the foreseeable future. The fiscal year 2022 request includes $55 million and over 175 positions to address cyber threats and cybersecurity risks.

The FBI has been assigned an expanded role in the cyber arena—to maintain, on behalf of the entire U.S. Government, a knowledge base of cyber threat actors. To keep pace with these threats and to adequately address this new role, the FBI must make investments in both personnel to investigate state-sponsored hackers, hackers for hire, organized cyber syndicates, and terrorists, as well as in technology and tools to target these cyber actors. The FBI must equip each field office with the necessary investigative, analytical, technical, and administrative personnel to adequately address cyber threats. Every field office requires an appropriately staffed cyber squad—which we do not have today.

Funding included in the request would also allow the FBI to invest in training and developing the cyber workforce. The FBI must have a skilled cadre of cyber experts to address the myriad of sophisticated attacks employed by our adversaries.

Not only should cyber personnel have a baseline cyber skill level, but as technical gaps are identified, the FBI will need to have resources in place to train segments of its cyber workforce.

The FBI must also continue to prioritize collaboration—with the private sector, with partners in the Intelligence Community and other Federal agencies, and with our international partners—as many cyber actors perpetrate their activities from an ocean away.

The FBI must also invest in its own cybersecurity infrastructure. Internal FBI networks must be protected to ensure we do not become victims of the adversaries we investigate. Finally, we look forward to continuing to work with Congress, the Department of Justice, and our interagency partners regarding these important issues.

Question 4. I want to turn our attention to a topic that you and I have discussed a number of times before—the opioid epidemic. As West Virginia has been ravaged by the opioid epidemic, I've supported the special agents in charge of the regional FBI office in their efforts to catch the largest distributors and try and stem the flow of drugs into the State. It's now well known that a single pharmacy in the West Virginia town of Kermit, with a population of less than 400 people, received shipments of roughly 9 million pain pills over just 2 years to a single pharmacy. These events take a toll on Americans not just in my State, but throughout the country. And unfortunately, for many of these men and women who are caught in this epidemic, more and more people face severely limited job opportunities after serving their time for crimes committed as a result of their addiction. To help fix this problem, I introduced a bill called the Clean Start Act last Congress and again this Congress, which seeks to help former addicts with criminal records seal those records if they complete a comprehensive addiction treatment program and show that they have turned their lives around. It is our job as public servants to help those who are unable to help themselves, and assisting those who have negatively impacted by the opioid epidemic is one of the most impactful things we can do.

a. How do you plan on curtailing the opioid crisis in the U.S?

Answer. The opioid crisis is a serious epidemic that requires a multidisciplinary approach involving aggressive investigation and prosecution. The FBI is collaborating with partners in the healthcare, treatment, and education field to leverage our resources in the fight against this deadly epidemic plaguing our communities. We also continue to participate in high-level meetings with the Canadian and Mexican governments to address public health, public safety, and law enforcement opportunities and challenges inherent in countering the illegal drug trade overall, to include the current illicit opioid crisis.

b. How does the FBI plan to combat the accessibility and convenience of the sale of opioids online?

Answer. The FBI created the Joint Criminal Opioid and Darknet Enforcement (JCODE), in 2018, as a multi-agency initiative laser-focused on combating the borderless, worldwide distribution of illegal drugs online. Since that time, JCODE has been relentless in finding and arresting drug dealers around the world who attempt to evade justice by operating on the darknet, as well as keeping dangerous drugs—particularly counterfeit and contaminated drugs—off the streets and away from the thousands of people who fall victim every year. JCODE provides structure, intelligence, and ever-expanding technological capabilities toward disrupting the darknet criminal market place, neutralizing bad actors, and protecting our communities.

c. What additional authorities do you believe that the FBI needs to effectively stop the flow of prescription opiates and other illegal drugs into our country?

Answer. The FBI defers to the Department of Justice on matters of legislation; however, as discussed above, the FBI leverages its existing authorities and partnerships to combat the illegal drug trade, including the illicit opioid crisis.

Question 5. It is no secret that the talk of Congress right now is the possibility of an infrastructure package. However, in order for an infrastructure package to be passed, it goes without saying that we have to have a way to pay for it and pass some sort of tax reform. One of the components of tax reform that is being discussed is increasing resources available to the Internal Revenue Service (IRS) to improve internal security systems as well as increase enforcement activities. Approximately two weeks ago, a number of high profile and wealthy Americans had their confidential personal income and tax data leaked by a media outlet. The IRS has announced that the agency has opened an investigation into the leak of this data, and it has been reported that the IRS has recommended that your Bureau also open an inves-

tigation into this matter. It goes without saying that in lieu of these attacks, it would behoove Congress to increase the annual IRS budget so that proper systems may be implemented to protect against these types of leaks. However, in the interim, we need to ensure that the systems we do have in place are working as they were intended.

a. What steps has the FBI taken to assist the Department of Treasury and the IRS to address these leaks?
b. When can we expect the FBI's investigation of the leak to conclude? Can we expect the FBI to brief members of this Committee following the conclusion of the FBI's investigation on the results as well as steps that can be taken going forward to prevent these occurrences from reoccurring?

Answer. As you may be aware, the Secretary of the Treasury has testified that the Internal Revenue Service (IRS) is looking into the matter as is the Treasury Inspector General for Tax Administration (TIGTA). She further stated that the matter had been referred to the Treasury Inspector General, as well as the Department of Justice.

The Department is committed to taking investigative steps as appropriately predicated and authorized, carefully reviewing referrals we receive, and, as appropriate, considering relevant and admissible evidence in light of the *Principles of Federal Prosecution.* While we understand how important this issue is to you, longstanding Department policy will preclude us from providing your office with any information related to this matter outside the public record.

CONCLUSION OF HEARINGS

[Whereupon, at 3:32 p.m., Wednesday, June 23, the hearings were concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2022

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.—The subcommittee was unable to hold hearings on nondepartmental witnesses. The statements and letters of those submitting written testimony are as follows:]

PREPARED STATEMENT OF THE AMERICAN BAR ASSOCIATION

April 1, 2021

The Honorable Jeanne Shaheen,
Chair
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate
Washington, DC 20510

The Honorable Jerry Moran,
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate
Washington, DC 20510

The Honorable Matt Cartwright,
Chair
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States House of Representatives
Washington, DC 20515

The Honorable Robert Aderholt,
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States House of Representatives
Washington, DC 20515

Re: Funding for Tribal Courts to Ensure Access to Justice Following the U.S. Supreme Court Decision in *McGirt v Oklahoma*

DEAR CHAIR SHAHEEN, RANKING MEMBER MORAN, CHAIR CARTWRIGHT, AND RANKING MEMBER ADERHOLT:

On behalf of the American Bar Association (ABA), the largest voluntary association of lawyers and legal professionals in the world, I write to express our concerns over inadequate funding of Tribal criminal justice that has contributed to staggering rates of violent crime and victimization on many Indian reservations. This is not a new problem.

The underfunding of the Tribal justice systems has been well-documented in report after report for over two decades.[1] Most recently, in 2020, the Bureau of Indian

[1] U.S. Civil Rights Commission 1991 Report *The Indian Civil Rights Act: A Report of the United States Commission on Civil Rights;* the U. S. Civil Rights Commission 2003 Report *A Quiet Crisis: Federal Funding and Unmet Needs in Indian Country;* the Indian Law and Order Commission 2013 report *A Roadmap for Making Native America Safer: Report to the President*

Continued

Affairs (BIA) submitted a *Report to Congress on Spending, Staffing, and Estimated Funding Costs for Public Safety and Justice Programs in Indian Country* estimating that $1.2 billion was needed for Tribal courts to provide a minimum base level of service to all federally recognized Tribal nations in 2018. A recent Supreme Court decision leaves no doubt that even this level of funding, which was never achieved, will not be sufficient to meet current needs.

In July 2020, the United States Supreme Court recognized the inherent Tribal jurisdiction over Native American sovereign lands in Oklahoma. In its decision in *McGirt v Oklahoma,* the Court recognized that simply because a State encroaches onto sovereign Indian Lands, that does not give the State authority to exercise jurisdiction to prosecute State law crimes in contravention of treaty provisions.

As a result, Tribal and Federal courts and law enforcement must now devote substantial resources to criminal cases that had been heard in State court prior to the decision in *McGirt.* On March 11, 2021, the Oklahoma Court of Criminal Appeals confirmed that both the Cherokee Nation and Chickasaw Nation reservations are intact based on *McGirt,* and the State courts within each of the reservation counties have started releasing defendants to be retried before Tribal and or Federal courts. (The Oklahoma Court of Criminal Appeals has not yet ruled on cases involving the Seminole Nation and the Choctaw Nation.) Consequently, several thousand cases will now be redirected to Tribal courts in Oklahoma, creating an even greater need for funding to ensure adequate numbers of judges, support staff, facilities, and equipment to address these long overdue proceedings. The need will, of course, be much greater if *McGirt* impacts treaties outside of Oklahoma.

The American Bar Association has long affirmed that Tribal justice systems are the primary and most appropriate institutions for maintaining order in Tribal communities. We have repeatedly urged the United States Government "to support quality and accessible justice by ensuring adequate, stable, long-term funding for Tribal justice systems".[2] Despite urgent pleas by Tribes, Tribal courts, and concerned organizations representing myriad disciplines for the U.S. Government to appropriate the funds that are needed to provide the more than 350 Tribal justice systems with the resources they need to do this important work, there is a critical funding shortfall that needs to be recognized and rectified as we enter the fiscal year 2022 budget cycle.

We appreciate the recent attention given to the needs of Native Americans in the COVID 19 relief bill. However, the funds included in that legislation do not begin to address the funding needed to support the specific responsibilities of Tribal Courts. The funding of Tribal Courts is an area of long-standing neglect and requires immediate attention.

Therefore, we urge you to address this important funding priority this year and we stand ready to assist you in whatever way we can.

[This statement was submitted by Patricia Lee Refo, President.]

PREPARED STATEMENT OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

FISCAL YEAR 2022 APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION: EDUCATION AND HUMAN RESOURCES AND SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES DIRECTORATES AND U.S. CENSUS BUREAU

Chair Shaheen, Ranking Member Moran, and Members of the subcommittee, thank you for the opportunity to submit written testimony on behalf of the American Educational Research Association (AERA). I want to begin by recognizing your longstanding support for the National Science Foundation and thank you and your staff for your strong commitment to maintaining agency flexibility in funding cutting edge science. AERA recommends that the National Science Foundation (NSF) receive at least $10 billion in fiscal year 2022. This recommendation is consistent with that of the Coalition for National Science Funding (CNSF), in which AERA is a long-term active member. Furthermore, this request aligns with the Biden administration's request and the dear colleague letter led by Senator Markey. AERA also recommends $2 billion for the Census Bureau, consistent with the recommendation of The Census Project.

& Congress of the United States; the U.S. Department of Justice, Attorney General's Advisory Committee on American Indian/Alaska Native Children Exposed to Violence 2014 Report *Ending Violence So Children Can Thrive;* and the U. S. Civil Rights Commission 2018 report *Broken Promises: Continuing Federal Funding Shortfall for Native Americans.*

[2] The ABA has adopted extensive policy supporting Tribal court funding, accessible at: https://www.americanbar.org/content/dam/aba/administrative/crsj/native-american-concerns.pdf.

AERA is the major national scientific association of 25,000 faculty, researchers, graduate students, and other distinguished professionals dedicated to advancing knowledge about education, encouraging scholarly inquiry related to education, and promoting the use of research to serve public good. Many of our members are engaged in science, technology, engineering, and mathematics (STEM) education research. Our members work in a range of settings from universities and other academic institutions to research institutes, Federal and State agencies, school systems, testing companies, and nonprofit organizations engaged in conducting research in all areas of education and learning from early childhood through the workforce.

Given the expertise of the AERA membership, my testimony will focus on the importance of the Education and Human Resources (EHR) and the Social, Behavioral and Economic (SBE) Sciences Directorates at NSF. In addition, many of our members depend on an accurate Census count and data from the American Community Survey to do their work.

NATIONAL SCIENCE FOUNDATION

The Federal investment in research and scientific knowledge at NSF has led to innovation and discoveries that are applied in our daily lives. We appreciate the bipartisan interest in maintaining U.S. leadership and global partnerships in basic research through the Federal investments made in NSF.

The EHR and SBE Directorates are central to the mission of the NSF to advance fundamental knowledge and scientific breakthroughs and to ensure significant continuing advances across science, engineering, and education. EHR support is vital to research discoveries, capacity building, and methodological innovations directly related to STEM education and learning from early education through workforce development. Research and science supported by the EHR and SBE Directorates are also inextricably linked to the science and research of the other directorates (for example, Computer and Information Science and Engineering).

Furthermore, the EHR and SBE directorates are vital not just to producing essential knowledge but also to harnessing that knowledge to enhance productivity, innovation, safety, security, and social economic well-being. I also wish to highlight the National Science Board Vision 2030, which calls for expanding the STEM talent pool. Ongoing NSF initiatives to broaden participation through programs such as NSF INCLUDES in EHR and the Build and Broaden program within SBE are examples to increase the diversity of the STEM educator and research workforce.

As indicated in the agency's budget request for fiscal year 2022, 95 percent of appropriated funds directly supported research and science, technology, engineering, and mathematics (STEM) education through grants and cooperative agreements in fiscal year 2020, with 80 percent of funding supporting research at colleges and universities. In addition, more than 118,000 K–12 students and 40,000 K–12 teachers benefitted from programs that directly engage them in STEM experiences within and outside the classroom.

Education and Human Resources Directorate

The EHR Directorate at NSF is responsible for providing the research foundation necessary to achieve excellence in U.S. STEM education. EHR accomplishes this goal by supporting the development of a scientifically-literate citizenry as well as a STEM-skilled workforce. Advances in the industries of the future, including artificial intelligence and quantum information science, require building interest and engagement in STEM throughout the lifespan.

The EHR Directorate commitment to invest in fundamental research related to STEM across all education levels and to promote evidence-based innovations in teaching practices, instructional tools, and programs is essential to advancing STEM education and preparing the next generation of STEM professionals. EHR funded researchers are asking key questions, for example, about how to spark students' interest in math and science and keep them engaged, or about why so many students lose interest and confidence and about what can be done to keep them engaged. Understanding these and many other questions will help the United States build a well-educated and technology-literate workforce necessary for a prosperous economic future.

Key to advancing STEM education research is the EHR Core Research (ECR) program, an important resource to the field that builds fundamental knowledge and capacity to understand STEM teaching and learning and develop the STEM educator and workforce pipeline. ECR grants have supported critical work in equity, inclusion, and ethics in postsecondary academic workplaces and the academic profession, as well as research to improve STEM teaching and learning for students with disabilities. We also applaud NSF in investing in midscale research infrastructure, serving as a potential resource for addressing key needs that include building data

infrastructure capacity, constructing networked learning laboratories, and developing innovative diagnostic assessment tools.

As the Nation continues to recover from the effects of the COVID–19 pandemic, research supported by EHR will be critical to fostering STEM learning in formal and informal settings. Through the RAPID program, EHR provided grants to education researchers to inform remote instruction, develop STEM curriculum that incorporated the COVID–19 pandemic to understand scientific principles, and provide insight into issues of equity in STEM education. Additional survey work and research supported through RAPID funding highlighted how the pandemic affected undergraduate and graduate students, including their engagement and interest in STEM and their satisfaction with online STEM coursework.

Increased investment in EHR is critical to support research to inform an educational system that will continue to incorporate technology inside and outside the STEM classroom and labs. In addition, the EHR Directorate's focus on developing our Nation's scientific workforce requires resources to ensure that early career scholars and graduate students who have experienced unanticipated disruptions to their scientific careers during the pandemic remain in the STEM talent pipeline. Some examples include material support to emerging scholars (both salary and "soft support"), mechanisms to connect and build communities among scholars, and focus on mentoring.

Social, Behavioral and Economic Sciences Directorate

In addition to the significant investments in education sciences provided by EHR, AERA values the important role the SBE Directorate in funding important education research and in social, family, and peer contexts connected to learning. The SBE Directorate also houses the National Center for Science and Engineering Statistics (NCSES).

The SBE Directorate supports research to better understand people and reveals basic aspects of human behavior in the context of education and learning. SBE funded research adds fundamental knowledge essential to promoting the Nation's economy, security, and global leadership. Understanding social organizations and how social, economic, and cultural forces influence the lives of students is important to improving teaching and learning and advancing STEM education.

The budget for SBE is 4 percent of the budget for Research and Related Activities, yet it provides approximately 62 percent of the Federal funding for basic research in the social, behavioral, and economic sciences at academic institutions.

National Center for Science and Engineering Statistics (NCSES)

In addition, AERA has a strong interest in the National Center for Science and Engineering Statistics (NCSES) located in the SBE Directorate. As one of the Federal principal statistical agencies, NCSES provides invaluable statistical information about the science and engineering infrastructure and workforce in the U.S. and around the world. NCSES collects and analyzes data on the progress of STEM education and the research and development, providing valuable information on the trajectories of STEM graduates both in STEM and non-STEM careers.

Additional resources in funding and staffing in fiscal year 2022 for NCSES would support critical activities to develop new data techniques building on administrative data and to enhance data tools and visualizations to facilitate access to statistical resources. These methodological advances will be necessary for NCSES to implement the Foundations for Evidence-based Policymaking Act and to build the NSF data infrastructure to securely link its survey data with administrative data in other Federal agencies.

NCSES will also play a pivotal role in supporting the overall NSF priority to bring the "Missing Millions" from traditionally underrepresented populations into the STEM pipeline. Expanding NCSES surveys and incorporating information on inclusion—including data on the participations of LGBTQ+ populations, persons with diverse (dis)abilities, and other demographic attributes-can help NSF, other science agencies and institutions, and fields of science understand disparities in STEM and inform broadening participation initiatives.

CENSUS BUREAU

I also wish to emphasize the importance of adequate support for the Census Bureau, especially critical in the tabulation of data from the 2020 Decennial Census and in maintaining important survey collections. AERA recommends funding the Census Bureau at $2 billion in fiscal year 2022.

We appreciated the inclusion of a robust investment in fiscal year 2021 to ensure that the Census Bureau had the needed resources to conduct the 2020 Decennial Census. The requested amount of $2 billion for fiscal year 2022 will provide the

agency with needed resources to process and finalize the enumeration and related activities for the 2020 Census, which experienced delays due to the COVID–19 pandemic. In addition, this amount of funding will provide resources for planning for the 2030 Decennial Census and continue the administration of the Household Pulse Survey, which has provided valuable, real-time data to inform the COVID–19 response. The recommended funding support will also allow the Census Bureau to continue to conduct the American Community Survey and the Current Population Survey.

Thank you for the opportunity to submit written testimony in support of at least $10 billion for the National Science Foundation and $2 billion for the Census Bureau in fiscal year 2022 appropriations. AERA would welcome the opportunity to work with you and your subcommittee to best further the crucial advances of the National Science Foundation and the important data provided by the Census Bureau. Please do not hesitate to contact me if AERA can provide additional information regarding this recommendation or the significant science made possible through the support of these agencies.

[This statement was submitted by Felice J. Levine, PhD, Executive Director.]

PREPARED STATEMENT OF THE AMERICAN GEOPHYSICAL UNION

FISCAL YEAR 2022 BUDGET REQUESTS FOR THE NATIONAL AERONAUTICS & SPACE ADMINISTRATION, NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION, AND NATIONAL SCIENCE FOUNDATION

The American Geophysical Union (AGU), a non-profit, non-partisan scientific society, appreciates the opportunity to submit testimony regarding the fiscal year 2022 budget request for the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF). AGU, on behalf of its community of 130,000 Earth and space scientists, respectfully requests that the 117th Congress appropriate the following:

—$9 billion for NASA's Science Mission Directorate (SMD),
—$150 million for NASA's Office of STEM Engagement,
—at least $6.9 billion for NOAA, and
—at least $10 billion for NSF.

AGU's appropriations requests for each respective agency take into consideration any previous budget cuts and is driven by the need for significant investment in Federal research and development to ensure that the U.S. remains at the forefront of research and innovation.[1]

NATIONAL AERONAUTICS & SPACE ADMINISTRATION

AGU requests that Congress appropriate $9 billion for NASA's Science Mission Directorate (a 23 percent increase over fiscal year 2021 levels) and $150 million for NASA's Office of STEM Engagement (an 18 percent increase over fiscal year 2021 levels). This request will allow NASA to remain on track to steadily advance existing and new missions, provide unique opportunities for the next generation of STEM professionals and ensure that the U.S. maintains its global leadership in the Earth and space sciences.

Additionally, we request that Congress appropriate equitable funding increases across the science mission divisions within NASA's Science Mission Directorate.

Earth Science and Planetary Science Divisions

Over the last 5 years, billion-dollar disasters have cost the United States more than $600 billion and this trend is projected to worsen.[2] It is critical that we increase our investments in NASA's Earth Science Division to better understand how Earth's weather and climate is changing on daily and long-term scales. Additionally, NASA Earth Science produces critical information and data that public and private sector decision-makers use to mitigate the resulting risks and understand the opportunities.

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[1] The Perils of Complacency, American Academy of Arts and Sciences, September 2020, https://www.amacad.org/sites/default/files/publication/downloads/Perils-of-Complacency__Report-Brief__4.pdf

[2] NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021). https://www.ncdc.noaa.gov/billions/, DOI: 10.25921/stkw-7w73

The missions and discoveries of the Planetary Science Division inspire future generations of scientists and STEM professionals to choose science as a career. Robust funding for Planetary Science will allow NASA to pursue human space exploration of the Moon and Mars without sacrificing other decadal priorities, such as a balanced portfolio of missions and other exploration targets in our solar system.

Earth and planetary sciences are complementary and integrally related to one another. From picking the perfect day to launch a satellite to ensuring that our understanding of other planets is accurate, our knowledge of Earth informs our understanding of other worlds in the solar system. In turn, our exploration of other worlds advances our knowledge of Earth's evolution and processes.

Heliophysics Division

Increased funding for Heliophysics will support the continuation of the Diversify, Realize, Integrate, Venture, Educate (DRIVE) initiative. DRIVE's focus includes enabling novel technologies such as advanced computational tools, creating DRIVE Science Centers across the country, and supporting the work of early career investigators. Increased Heliophysics funding will also advance innovation to address space weather, including observational and computational capabilities, as well as research-to-operations and operations-to-research efforts. A better understanding of space weather will benefit our space- and ground-based national security assets and safeguard human health against radiation during long-duration deep space exploration activities.

Office of STEM Engagement

As our country recovers from the COVID–19 pandemic, we must ensure that our educational institutions also survive. As such, it is critical that we invest in programs such as NASA's efforts to re-engage and support students interested in STEM. Increased funding for NASA STEM programs, including Space Grant, Minority University Research and Education Project (MUREP), and Established Program to Stimulate Competitive Research (EPSCoR), will directly benefit every State in the Nation by providing additional opportunities for STEM students of all ages.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

AGU requests that Congress appropriate at least $6.9 billion for NOAA in fiscal year 2022 (29 percent increase over fiscal year 2021 levels). From weather forecasts to fisheries data, to groundbreaking research about the world around us, NOAA provides critical data, products and services that are essential to our Nation's economic stability and directly benefit the American public, planners, emergency managers, and other decision makers. However, NOAA has been severely underfunded in previous spending bills and proposals. Since fiscal year 2018, NOAA's funding has been cut by nearly seven percent.

From large corporations to small businesses, the decision-based forecasts provided by NOAA save vital time, money, and resources. Just last year, nearly half of the record 30 named tropical storms during the Atlantic hurricane season made landfall-of which seven produced at least $1 billion each in damages.[3]

NOAA science also plays a critical role in informing the world about changes in the climate system, as well as the effectiveness of certain mitigation strategies. For example, agricultural production can be boosted by an estimated $300 million annually with improved El Niño forecasts.[4] However, NOAA is struggling to meet the increasing demand for climate data.[5] Significantly investing in climate research and filling the consistent gaps in NOAA's workforce are both critical to help the agency meet this need. Without robust funding at NOAA, we risk losing the data needed to make informed and proactive decisions, and our National and economic security will be left in a dangerously vulnerable position.

NATIONAL SCIENCE FOUNDATION

AGU requests that Congress appropriate at least $10 billion for NSF in fiscal year 2022 (an approximately 18 percent increase over fiscal year 2021 levels). Ambitious and robust funding for NSF is critical if the U.S. hopes to maintain its leadership

[3] NOAA's National Centers for Environmental Information. *Calculating the cost of weather and climate disasters.* https://www.ncei.noaa.gov/news/calculating-cost-weather-and-climate-disasters

[4] NOAA's Climate Program Office. https://cpo.noaa.gov/Our-Work/Success-Stories

[5] Remarks from NOAA officials during House Committee on Appropriations hearing (15 April 2021). https://appropriations.house.gov/events/hearings/increasing-risks-of-climate-change-and-noaas-role-in-providing-climate-services

in science and technology and reap the economic and national security benefits of that leadership.

As an example of the benefits of NSF investments, throughout the fight against the COVID–19 pandemic, we have reaped the benefits of decades of NSF investment in additive manufacturing and 3–D printing, which have enabled the scale up of PPE production, the understanding of the ecological transmission of zoonotic diseases, and supercomputing to better track the spread of the pandemic.

However, the pandemic also highlighted the need to increase future investments in NSF, especially for STEM programs and systems and convergent science to ensure greater understanding of and resilience to pressing societal issues, including climate change, which present extremely challenging and complex scientific questions.

In STEM, of particular need of support are K–12 education, including furthering our understanding of online teaching effectiveness, and programs for graduate students and early career students who can too easily fall out of the STEM pipeline at a time when our country needs future innovators. Increased funding for NSF is also needed to expand STEM opportunities and capacity evenly throughout our country, from urban and rural communities to Tribal colleges and universities and minority-serving institutions. To remain competitive, we must develop a more diverse and inclusive STEM workforce that will ask novel questions that will power the science and innovations that shape our future.

CONCLUSION

At a time when our Nation is recovering and has many pressing priorities that need to be addressed, the future of the U.S. will be strengthened by strong and sustained investments in the full scope of our research enterprise—particularly the science and education programs within NASA, NOAA, and NSF. AGU appreciates the subcommittee's leadership in these areas, as well as the opportunity to submit this testimony. Thank you for your thoughtful consideration of our requests.

[This statement was submitted by Brittany Webster, Program Manager, Science Policy & Government Relations and Michael Villafranca, Senior Specialist, Science Policy & Government Relations.]

PREPARED STATEMENT OF THE AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM

On behalf of the Nation's Tribal Colleges and Universities (TCUs), which are the American Indian Higher Education Consortium (AIHEC), we are pleased to present our fiscal year 2022 recommendations regarding the National Science Foundation's TCU Program (NSF–TCUP), Louis Stokes Alliance for Minority Participation (LSAMP), and the National Aeronautics and Space Administration's Minority University Research and Education Project (NASA–MUREP). We respectfully recommend the following funding levels:

National Science Foundation (NSF)

Education and Human Resources Directorate (EHR):

—*Tribal Colleges and Universities Program (TCUP):* TCUs urge the subcommittee to fund competitively awarded NSF–TCUP grants at a minimum of $20,000,000 for fiscal year 2022.

—*Louis Stokes Alliance for Minority Participation (LSAMP):* TCUs urge the subcommittee to support the NSF–LSAMP program with an added emphasis for American Indian, Alaska Native, and TCU students.

—TCUs support President Biden's $100 million request to advance racial equity in science and engineering.

National Aeronautics and Space Administration (NASA)

—*NASA Headquarters, Office of Education—Minority University Research and Education Project (MUREP):* TCUs urge the subcommittee to expand the NASA MUREP program with robust funding and establish a TCU-specific program within MUREP at $5,000,000 for fiscal year 2022

—TCUs support President Biden's $20 million request to expand initiatives to attract and retain underserved and underrepresented students in engineering and other STEM fields.

Tribal Colleges and Universities: Raising and Training the Nation's Native STEM Workforce

TCUs are an essential component of American Indian and Alaska Native STEM education, research, and workforce. Currently, 37 TCUs operate more than 75 cam-

puses and sites in 16 States. TCU geographic boundaries encompass 80 percent of American Indian reservations and Federal Indian trust lands. American Indian and Alaska Native (AI/AN) TCU students represent more than 230 federally recognized Tribes and hail from more than 30 States. Nearly 80 percent receive Federal financial aid and more than half are first generation students. In total, TCUs serve more than 160,000 AI/ANs and other rural residents each year through a wide variety of academic and community-based programs. TCUs are public institutions accredited by independent, regional accreditation agencies and, like all U.S. institutions of higher education, must regularly undergo stringent performance reviews to retain their accreditation status.

The Federal Government, despite its direct trust responsibility and binding treaty obligations, has never fully funded TCU institutional operations as authorized under Federal law. Yet despite funding challenges, TCUs are responding to the STEM workforce needs across the country. In fall 2020, 1,733 TCU students were enrolled in one of 191 STEM program at TCUs. TCUs have established programs in high-demand fields: 11 TCUs offer pre-engineering programs, two TCU offers bachelor's degrees in industrial and electrical engineering, five TCUs offer STEM teacher education programs, and 14 TCUs offer nursing programs. These efforts are preparing AI/AN nurses, engineers, and science and math teachers who contribute to a robust pipeline of STEM professionals in Indian Country. TCUs also train professionals in other high-demand STEM fields, including agriculture, information technology, and natural resource management.

TCUs know that to break the cycle of generational poverty and end the culture of dependency that grips much of Indian Country, TCUs must bring industry partners and STEM jobs to Indian Country. TCUs and Tribes must promote new Native-owned and operated STEM-based businesses, create public-private partnerships, and build a culture of self-sufficiency and innovation. NSF and NASA funding is essential in supporting this effort to promote STEM-enabled economic development in Indian Country and throughout rural America.

Each of the following Federal grant programs has invested in the development of STEM-centered instruction, research, and job creation across Indian country.

NATIONAL SCIENCE FOUNDATION (NSF)

Education and Human Resources Directorate (EHR)—Tribal Colleges and Universities Program (TCUP): TCUs urge the subcommittee to fund competitively awarded NSF–TCUP grants at a minimum of $20,000,000. The NSF–TCUP, administered by the NSF Education and Human Resources Directorate, is a competitive grant program that enables TCUs and Alaska Native Serving/Native Hawaiian Serving Institutions (AN/NHs) to develop and expand critically needed STEM education and research programs relevant to their indigenous communities.

Since the program began in 2001, NSF–TCUP has become the primary Federal program for building STEM programmatic and research capacity at TCUs. For example, NSF–TCUP funding supported Navajo Technical University (Crownpoint, NM) in the development of its electrical and industrial engineering programs, which received accreditation from the Accreditation Board of Engineering and Technology (ABET) in 2018. This marks a significant milestone, with NTU leading the way as the first TCU to receive ABET accreditation.

There are many success stories at the TCUs. In 2014, Cankdeska Cikana Community College, Sitting Bull College, Nueta Hidatsa Sahnish College, and Turtle Mountain Community College established an engineering education partnership with North Dakota State University (NDSU) through funding from NSF TCUP's Pre-engineering Education Collaborative (PEEC). The TCUs and NDSU developed a formal curriculum and support system for students to obtain a bachelor's degree in engineering, beginning with pre-engineering coursework offered collaboratively by TCU and NDSU engineering faculty; then students transition to NDSU to complete their bachelor's degree. The first graduate of the program, Ryan Brown, was a pre-engineering student at CCCC who went on to earn his bachelor of science degree in civil engineering at NDSU in 2018. Brown returned to the Spirit Lake Reservation and currently serves as a project manager for the Spirit Lake Tribal Planning Department.

Growing up in rural Montana, Cody Natoni Sifford (Diné)[1] pursued a degree in environmental science at Salish Kootenai College (SKC) (Pablo, MT), participating in several internships with Federal agencies, and completing a master's degree in

[1] Cody Natoni Sifford, Winds of Change, American Indian Science and Engineering Society, April 2017. https://woc.aises.org/content/cody-natoni-sifford-navajo-confederated-Tribes-salish-and-kootenai-geographic-information

forest resources at the University of Washington Seattle. Sifford has since returned to Montana to serve as an adjunct professor at SKC and work as a geographic information systems analyst for the Confederated Tribes of Salish and Kootenai forest department.

These success stories notwithstanding, AI/AN students are disadvantaged from pursuing STEM-centered career from an early age. AI/AN youth have the highest high school drop-out rate of any ethnic or racial group in the country. Those who do pursue postsecondary education often require developmental classes before taking on a full load of college-level courses. Placement tests administered at TCUs to first-time entering students in academic year 2018–19 showed that 36 percent required remedial math. Our data indicates that while 51 percent will successfully complete the course, many will take more than 1 year to do so.

Through NSF–TCUP grants, TCUs and AN/NHs are actively working to address this problem by developing strong partnerships with their K–12 feeder schools to engage students in culturally appropriate STEM education and outreach programs. Salish Kootenai College, located on the Flathead Indian Reservation, created a 2-year STEM Academy to prepare junior and senior high school students for college. Participating high school students engage in collaborative work with STEM researchers, conduct culturally relevant research, and take courses to earn college credit.

TCUs use NSF–TCUP funding to provide students with valuable research experience in STEM fields. Through these opportunities, students conduct place-based research that serves their communities and can have national and international impacts. At Northwest Indian College (NWIC) (Bellingham, WA), students are conducting complex research related to food security focused on salmon, shellfish, and indigenous sea cucumbers. Through a partnership with Western Washington University, NWIC graduates continue to pursue their academic and career goals through WWU's master's degree programs. Aaniiih Nakoda College (Harlem, MT) faculty and students monitor streams for contaminants and are investigating West Nile virus vectors; and Sitting Bull College (SBC) (Fort Yates, ND) has established a water quality monitoring laboratory serving the Standing Rock Sioux and surrounding communities. SBC studies show that students participating in the college's research have retention rates that are double the rate of students who are not engaged in research.

Even with its advances and successes, funding for the NSF–TCUP program has been stagnant for years. Therefore, not all of the TCUs have had an opportunity to benefit from this very important program. We urge the subcommittee to expand the competitively awarded NSF–TCUP grants at a minimum of $20,000,000.

Louis Stokes Alliance for Minority Participation (LSAMP): TCUs urge the subcommittee to support the NSF LSAMP program with an added emphasis for American Indian, Alaska Native, and TCU students. In FY2019, $46 million was appropriated for the LSAMP program to support historically underrepresented students in STEM fields. However, only one TCU was awarded direct funding under this program. The All Nations LSAMP (ANLSAMP) program at Salish Kootenai College (Pablo, MT) has had tremendous success in increasing AI/AN degree attainment in STEM programs. Many small, underfunded TCU STEM programs consider ANLSAMP as an important resource for expanding AI/AN student research opportunities, sharing best practices, and student support. ANLSAMP scholars receive financial support for conference travel, internship opportunities, and research stipends, which would otherwise not be possible. Through the combined efforts of the 23 TCUs and 11 mainstream institutions, more than 2,000 AI/ANs and underresourced minority students have graduated with bachelor's degrees in STEM. Additionally, a recent survey revealed that more than 80 percent of ANLSAMP participants contacted had either graduated with a STEM major or bridged to an advanced degree program. Unfortunately, since the creation of the LSAMP program in 1991, NSF has neglected to prioritize AI/AN-serving programs, such as ANLSAMP, which are critically needed to support STEM degree attainment in Indian Country.

In 2018, after several years of no funding for a TCU-led grant proposal, $1 million was awarded through an LSAMP grant and supplement to support TCU students over the next 5 years. However, it is alarming that less than one percent of the total $46 million was awarded to TCUs in FY2019. ($200,000 was provided in new funding, as a grant supplement, to TCUs in FY2019.) We ask that the subcommittee specifically urge NSF to strengthen support for AI/AN students through the LSAMP grant program.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Minority University Research and Education Project (MUREP): TCUs urge the subcommittee to expand the NASA MUREP program with robust funding and support a TCU specific program within MUREP at $5,000,000 for fiscal year 2022. Under its current design, MUREP provides a range of competitive awards to Historically Black Colleges and Universities, Tribal Colleges and Universities, and other Minority Serving Institutions to recruit and retain underrepresented students in STEM fields. Due to the competitive aspect of current MUREP programs and limited funding, TCUs only receive funding from two MUREP grants: MUREP Institutional Research Opportunity (MIRO) and MUREP for American Indian and Alaska Native STEM Engagement (MAIANSE).

MUREP Institutional Research Opportunity (MIRO)

In October 2019, under the MUREP MIRO program, Sitting Bull College received $1 million to further develop curriculum for an environmental science master's degree centered on air quality research on the Standing Rock Reservation. SBC students and faculty work with NASA's Langley Research Center, NASA's Godard Space Flight Center, and the University of North Dakota to develop a regional research facility to monitor air quality on the Standing Rock Reservation. In the same MUREP MIRO award cycle, Navajo Technical University was selected to perform critical research and produce parts through its advanced manufacturing program for the Space Launch System at NASA's Marshall Space Flight Center. NTU's contributions through advanced manufacturing research and innovative parts production are advancing space exploration for the entire Nation.

MUREP for American Indian and Alaska Native STEM Engagement (MAIANSE)

The MAIANSE program provides a unique opportunity for direct collaboration between TCUs and NASA to engage students in NASA STEM related activities. Despite its popularity and value, participation in the MAIANSE program has been limited to three TCU projects each grant cycles due to limited funding.

In order to support the past TCU investment, AIHEC supports President Biden's budget request to increase the Office of STEM engagement by $20 million and requests that the subcommittee expand the NASA MUREP program through robust funding and support a Tribal College and University-specific program within MUREP at $5,000,000 for fiscal year 2022.

CONCLUSION

Tribal Colleges and Universities provide access to high-quality, culturally appropriate postsecondary education opportunities, including STEM-focused programs, for thousands of AI/AN students. The modest Federal investment in TCUs has paid great dividends in terms of employment, education, and economic development. We ask you to renew your commitment to help move our students and communities toward self-sufficiency by full considering our fiscal year 2022 appropriations requests. Thank you.

PREPARED STATEMENT OF THE AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

FISCAL YEAR 2022 FUNDING FOR THE NATIONAL SCIENCE FOUNDATION

The American Institute of Biological Sciences (AIBS) appreciates the opportunity to provide testimony in support of fiscal year 2022 appropriations for the National Science Foundation (NSF). We encourage Congress to provide NSF with at least $10.2 billion in fiscal year 2022.

AIBS is a scientific association dedicated to promoting informed decision-making that advances biological research and education for the benefit of science and society. AIBS works to ensure that the public, legislators, funders, and the community of biologists have access to information that can guide informed decision-making.

Biological research is in our National interest. Increasing our knowledge of how genes, cells, tissues, organisms, and ecosystems function is vitally important to efforts to improve the human condition. Food security, medicine and public health, national security, economic growth, and sound environmental management are informed by the biological sciences. The knowledge gained from NSF-funded research contributes to the development of new research tools and industries.

Biological research strengthens our economy. Research funding from NSF powers the expansion of the bioeconomy and has given rise to successful companies, such as Genentech, Ekso Bionics, and Ginkgo BioWorks, as well as new industries that provide more robust food crops or disease detection tools and techniques. The trans-

lation of biological knowledge into formal and informal education programs foster the development of the scientifically and technically skilled workforce needed by employers. Data show that employers continue to seek workers with scientific and technical skills. Science and engineering employment in the United States has grown more rapidly than the workforce overall and now represents 5 percent (or about 7 million) of all U.S. jobs.

The cornerstone of NSF excellence is a competitive, merit-based review system that underpins the highest standards of excellence. Through its research programs, NSF invests in the development of new knowledge and tools that solve the most challenging problems facing society.

—*Combating emerging diseases:* NSF-funded research is playing crucial role in our response to the COVID–19 pandemic. Fundamental research supported by NSF led to the development of critical diagnostic tools and medical devices being used to combat the outbreak. NSF supported the discovery of bacteria from thermal pools at Yellowstone National Park that contain thermostable enzymes that allow for the rapid copying of genetic material through a process called Polymerase Chain Reaction (PCR). This process was integral to manufacturing a widely used clinical test for determining whether a patient has been infected with SARS-CoV–2, the virus that causes COVID–19.

—*Mobilizing big data:* Access to and analysis of vast amounts of data are driving innovation. NSF enables integration of big data across scientific disciplines, including applications in the biological sciences. Digitization of biodiversity and natural science collections involves multi-disciplinary teams, which have put more than 125 million specimens and their associated data online for use by researchers, educators, and the public.

—*Enabling synthetic biology:* DNA editing has become more advanced and targeted with techniques such as CRISPR–CAS9 allowing scientists to rewrite genetic code and redesign biological systems. NSF funds research on how these techniques can be used to bio-manufacture new materials, treat diseases, and accelerate growth of the bioeconomy.

Other examples of research that have benefited the public are chronicled in the AIBS report, "Biological Innovation: Benefits of Federal Investments in Biology," which is available at https://www.aibs.org/assets/pages/policy/AIBS-Biological-Innovation-Report.pdf.

The NSF is the primary Federal funding source for biological research at our Nation's universities and colleges, providing 67 percent of extramural Federal support for non-medical, fundamental biological and environmental research at academic institutions.

The NSF is also an important supporter of biological research infrastructure, such as field stations, natural history museums, and living stock collections. These place-based research centers enable studies that take place over long periods of time and variable spatial scales.

Scientific collections are an important component of our Nation's research infrastructure. Recent reports have highlighted the value of mobilizing biodiversity specimens and data in spurring new scientific discoveries that grow our economy, improve our public health and wellbeing, and increase our National security. In 2019, the Biodiversity Collections Network released their report, *Extending U.S. Biodiversity Collections to Promote Research and Education,* outlining a national agenda that leverages digital data in biodiversity collections for new uses and calling for building an Extended Specimen Network. A 2020 report by the National Academies of Science, Engineering and Medicine (NASEM), *Biological Collections: Ensuring Critical Research and Education for the 21st Century,* argued that collections are a critical part of our Nation's science and innovation infrastructure and a fundamental resource for understanding the natural world. Both reports articulate a common vision of the future of biological collections and define a need to broaden and deepen the collections and associated data to realize the potential for biodiversity collections to inform 21st century science. This endeavor requires robust investments in our Nation's scientific collections, whether they are owned by a Federal or State agency or are part of an educational institution or free-standing natural history museum or another research center. While most Federal agencies have a role to play in supporting the development of the Extended Specimen Network, the NSF's leadership through the Advancing Digitization of Biodiversity Collections program has positioned NSF to play a central role in the development of the Extended Specimen Network.

The NSF supports recruitment and training of our next generation of scientists. Support for undergraduate and graduate students is critically important to our research enterprise. Students learn science by doing science, and NSF programs en-

gage students in the research process. NSF awards reached 1,900 colleges, universities, and other public and private institutions across the country in fiscal year 2020. Initiatives such as the Graduate Research Fellowship and the Faculty Early Career Development program are important parts of our National effort to attract and retain the next generation of researchers. Since 1952, the number of students supported by NSF Graduate Research Fellowships has grown to more than 60,000. In fiscal year 2020, nearly 313,000 people, including researchers, postdoctoral fellows, trainees, teachers and students, were supported directly by NSF.

Unfortunately, Federal research and development investments are shrinking as a share of the U.S. economy. The U.S. is still the largest performer of research and development globally, but our share of worldwide scientific activity has declined considerably over the past 20 years. Countries in East and Southeast Asia, especially China, have been rapidly increasing their investments in science. In fact, according to the National Science Board and the American Academy of Arts and Sciences, China may have recently surpassed the U.S in research and development spending. To remain at the global forefront of innovation and to fully realize the benefits of NSF-supported research, the government must make new and sustained investments in NSF. Unpredictable swings in funding disrupt research programs, create uncertainty in the research community, and stall the development of the next great idea.

The President's budget request for fiscal year 2022 proposes a 20 percent boost to NSF. If enacted, this increase will allow for critical Federal investments in scientific and educational research, as well as support for the development of the scientific workforce. Such an increase will also allow NSF to expand support for important new initiatives, such as the "LEAding cultural change through Professional Societies (LEAPS) of Biology" program, which aims to facilitate cultural changes in the biological sciences to broaden participation and advance diversity, equity, and inclusion.

Providing the NSF with at least $10.2 billion in fiscal year 2022 is necessary in undoing the recent stagnant funding that slowed American scientific discovery. The requested funding will grow and sustain the U.S. bioeconomy and enable NSF to accelerate work on important initiatives at the frontiers of science and engineering.

In addition to the appropriations process, Congress is currently considering reauthorization legislation relevant to the scientific community, including proposals to significantly expand the mission and budget of the NSF. Increasing investments in translational research will bolster U.S. global leadership and competitiveness in innovation.We ask Congress to also make robust investments in basic and foundational research.

We also urge Congress to pass additional funding for U.S. researchers and science institutions to accelerate recovery from the COVID–19 pandemic. The Research Investment to Spark the Economy (RISE) Act (HR. 869 and S. 289) will help natural history museums, botanical gardens, field stations, and other research institutions recover from the pandemic. These institutions lost revenue due to reduced, postponed, and canceled public programs, including formal and informal science education programs. Most of these institutions are non-profits and operate with budgets with limited capacity to absorb revenue losses resulting from reduced public visitation. Pandemic related closures and restrictions have also resulted in the loss of a field season for outdoor research, leading to research disruptions and a year's worth of critical data not being collected. Emergency relief funding proposed under the RISE Act, which includes $3 billion for NSF, would support U.S. researchers, including graduate students and postdoctoral researchers, who have had research interrupted as a result of the pandemic.

We encourage Congress to continue supporting increased investments in our Nation's scientific capacity. Thank you for your thoughtful consideration of this request and for your prior efforts on behalf of science and the National Science Foundation.

[This statement was submitted by Jyotsna Pandey, Ph.D., Public Policy Director.]

PREPARED STATEMENT OF THE AMERICAN MATHEMATICAL SOCIETY

NATIONAL SCIENCE FOUNDATION

Founded in 1888, the American Mathematical Society (AMS) is dedicated to advancing the interests of mathematical research and scholarship and connecting the diverse global mathematical community. We do this through our book and journal publications, meetings and conferences, database of research publications [1] that goes

[1] https://mathscinet.ams.org/mathscinet

back to the early 1800s, professional services, advocacy, and awareness programs. The AMS has approximately 25,000 individual members worldwide and supports mathematical scientists at every career stage.

The AMS appreciates the opportunity to submit written testimony in support of fiscal year 2022 appropriations for the National Science Foundation (NSF).

We encourage Congress to provide the NSF with at least $10 billion in fiscal year 2022.[2]

The NSF accounts for the majority of Federal support done by Ph.D. mathematicians at universities and colleges. In fiscal year 2018, 61 percent of support for academic research in mathematics came from the Federal Government,[3] and roughly half of that came from the NSF.[4]

Investments in research, including the departments and programs in the CJS bill, lead to innovations and new technologies that improve our health, grow our economy, and enhance our quality of life. The U.S. was once the uncontested leader in science and technology, but has seen our advantage erode as other nations have dramatically increased their investments in research. In particular, China has continued to dramatically increase its investments in science and technology, which have grown by 17.3 percent annually between 2010 and 2017.[5] During this same period, the U.S. investment has averaged a 4.3 percent increase annually.

The NSF is an efficient agency—almost 95 percent of its appropriated funds go out the door in grants and awards to support research projects, facilities and STEM education. NSF will continue to make strategic investments in basic research, the STEM workforce, and research infrastructure that will advance the Nation's global competitiveness economically and scientifically. A significant increase in congressional appropriations would help address the effects of years of high-quality grant proposals that go unfunded due to lack of sufficient funding. Those unmet needs continue. A 2019 National Science Board report[6] stated that in fiscal year 2018, "approximately $3.4 billion was requested for declined proposals that were rated Very Good or higher in the merit review process." This accounts for about 5,440 declined proposals at the NSF. The U.S. is leaving potentially transformative scientific research unfunded, while other countries are making significant investments.

The entire country benefits from NSF funding; the NSF invests in every State supporting researchers and students.[7] Society has benefitted from the many products, procedures, and methods that have resulted from NSF supported research in mathematics—research performed over many years and typically not focused on specific applications. The applications of advances in theoretical science, including theory of mathematics, occur on a timescale that means the investment is often hard to justify in the short run. And yet if we look back to the success, as opposed to ahead to when we expect success, the investment in fundamental research has had huge payoffs. These benefits include innovations such as the Google Page Rank algorithm, enhancement of magnetic resonance imaging (MRI), and in cybersecurity. The plethora of applications that have resulted from basic research in the mathematical sciences is described in the National Academies report "The Mathematical Sciences in 2025" or in the executive summary "Fueling Innovation and Discovery: The Mathematical Sciences in the 21st Century".[8, 9]

Finally, we are at a critical time for building and ensuring a stable STEM workforce of the future, a challenge exacerbated by the COVID–19 pandemic. Becoming a Ph.D. STEM researcher requires focus and dedication; the work is demanding. And the COVID–19 pandemic has derailed and even completely shattered many students' dreams and plans. Vitally important is NSF support for graduate students, postdoctoral fellows, and other early career scientists, who are disproportionately affected by the COVID–19 pandemic and are most likely to have had their career goals deferred or derailed. We need to reach and support promising STEM students across all genders, races, ethnicities, and geographies. At this challenging time, we cannot risk losing a generation of scientists who leave the field and never return.

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[2] This is the same amount supported by the Coalition for National Science Funding.

[3] https://ncses.nsf.gov/pubs/nsb20202/academic-r-d-in-the-united-States

[4] The DOD contributes approximately 25 percent, and HHS 13 percent. Other agencies (including DOE, USDA, NASA) contribute the remaining funds.

[5] Research and Development: U.S. Trends and International Comparisons. Science and Engineering Indicators, National Science Board, January 2020.

[6] https://www.nsf.gov/nsb/publications/2020/nsb202013.pdf

[7] https://nsf.gov/about/congress/factsheets.jsp

[8] https://www.nap.edu/catalog/15269/the-mathematical-sciences-in-2025

[9] https://www.nap.edu/catalog/13373/fueling-innovation-and-discovery-the-mathematical-sciences-in-the-21st

Thank you for your consideration of this request, and for your prior efforts on behalf of the NSF.

[This statement was submitted by Ruth Charney, Ph.D., President, and Karen Saxe, Ph.D., Director of Government Relations.]

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR ENGINEERING EDUCATION

SUPPORT OF FISCAL YEAR 2022 NATIONAL SCIENCE FOUNDATION AND NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FUNDING

Summary: This written testimony is submitted on behalf of the American Society for Engineering Education (ASEE) to the Senate subcommittee on Commerce, Justice, Science, and Related Agencies for the official record. ASEE appreciates the Committee's support for the National Science Foundation (NSF) and asks you to robustly fund the agency in fiscal year 2022, including the Research and Related Activities and the Education and Human Resources accounts. ASEE joins the Biden Administration in requesting support of at least $10.2 billion for NSF in fiscal year 2022 to help alleviate impacts of historical underinvestment at NSF, continue to grow its core research and education activities, establish a new Technology, Innovation and Partnerships (TIP) directorate, and address critical technologies where the U.S. is facing major competition from China. At NASA, ASEE supports the Administration's proposed growth for the Space Technology Mission Directorate (STMD) to increase its investment in crosscutting NASA technology gaps which support engineers and scientists in developing technology to advance science and space missions in the National interest. ASEE also supports proposed growth to NASA's Office of Education to advance NASA's initiatives to broaden participation of underrepresented groups in science and engineering.

Written Testimony: The American Society for Engineering Education (ASEE) is dedicated to advancing engineering and engineering technology education and research, and is the only society representing the country's schools and colleges of engineering and engineering technology. Membership includes over 12,000 individuals hailing from all disciplines of engineering and engineering technology and includes educators, researchers, and students as well as industry and government representatives. As the pre-eminent authority on the education of engineering professionals, ASEE works to develop the future engineering and technology workforce, expand technological literacy, and convene academic and corporate stakeholders to advance innovation and sound policy.

NATIONAL SCIENCE FOUNDATION

Engineering shapes our Nation and powers our innovation ecosystem. *NSF basic research,* conducted in engineering schools and colleges around the country, *catalyzes new industries and revolutionary advances.* There is high demand for a workforce of well-trained, engineers in industry and government to leverage these discoveries and develop innovative new technologies to improve our future. The partnership between the Federal Government and universities is *essential to growth and innovation across our economy,* and is helping to solve challenges in health, energy, and national security. *NSF is a tremendously important piece of this innovation ecosystem, funding basic engineering and engineering education research at universities and supporting students to enable access to engineering education.*

ASEE is grateful for recent increases, yet concerned that these investments have not kept pace with international competitors or growing research needs. Due to budget limitations, NSF is currently unable to fund $2 billion worth of very good and excellently rated proposals each year. With more funding, tremendous amounts of additional research and development could be undertaken, leading to novel and transformative discoveries. As the National Science Board predicted, in 2018 China surpassed U.S. investments in research and development. As some countries have been steeply accelerating research funding, increasing NSF's appropriation would help secure continued U.S. global innovation leadership.

NSF funding has additionally fallen far behind other research agencies, risking distortions in the overall STEM ecosystem. For example, over the last decade the Department of Energy (DOE) Office of Science has grown twice as much as NSF and is now almost the same size despite covering a much smaller range of topics. Other agencies depend on NSF-funded discoveries and workforce development for their missions. NSF-funded research catalyzes fundamental advances that are utilized for national security applications while engineers trained with NSF funding become key components of the National security workforce and industrial base.

ASEE is thankful for relief and research funding provided to NSF in the CARES Act and American Rescue Plan. NSF has a critical role to play in promoting economic recovery and research on many aspects of the pandemic. Continued support of NSF will be critical as the engineering community and the country move into the next phase of the COVID–19 pandemic. Engineers across the country have adapted quickly but challenges and disparities remain. NSF will be crucial to rebuilding the STEM pipeline, and building a better, more resilient STEM workforce.

ASEE follows the President's 2022 Budget Request in requesting that the Committee fund NSF at $10.2 billion in fiscal year 2022 to drive advances in research and education and ensure the U.S. retains global competitiveness and scientific leadership. While ASEE supports the President's proposal to create a new TIP directorate at NSF, it is essential that NSF continues to grow its core research and education activities.

Investments in engineering education and research from NSF are essential for having a workforce trained and ready to contribute to industry, government, and academia. NSF is a major supporter of engineering research and workforce initiatives funding 43 percent of engineering and 83 percent of computer science academic fundamental research. NSF-funded advancements touch every corner of our lives and economy, from wireless systems to advanced manufacturing, and from new tools to combat brain diseases to technologies to ensure our cybersecurity. NSF supports engineering education at all levels, ensuring the next generation of the U.S. engineering workforce is appropriately prepared to contribute and innovate.

The NSF *Directorate for Engineering* (ENG) provides critical support for engineering education and research across the breadth of the discipline. These investments have dual outcomes of training future engineers that will discover tomorrow's innovations, all while furthering today's cutting-edge research. Engineering investments at NSF provide critical advancements in areas such as resilient infrastructure, advanced materials and manufacturing, and bioengineering, in addition to equipping students with the skills they need to be the next generation of technological leaders. Divisions such as Engineering Education and Centers (EEC) support university research and Engineering Research Centers. ENG grantees have robust partnerships with industry, expand the boundaries of our understanding of how students most effectively learn engineering, provide experiential opportunities fundamental to engineering education.

The NSF *Directorate for Computer and Information Science and Engineering* also plays a key role supporting engineering education and research, particularly within the Division of Information & Intelligent Systems, which supports efforts at the frontiers of information technology, data science, and artificial intelligence, among other areas. These investments are critical as we move into a world even more reliant on human-technology interactions. The Division of Computer and Network Systems has been building capacity within Minority Service Institutions to contribute to both the knowledge base and human resource base in computing and engineering.

ASEE strongly supports NSF *Education and Human Resources* (EHR) funding to foster inclusive and effective learning and learning environments. The STEM workforce, particularly engineers, technologists, and computer scientists, drives our innovation and economic development. We need to fully develop all of our Nation's human talent in order to tackle pressing problems. Access to STEM experiences and skills are a critical aspect of developing well-rounded citizens, technological literacy, and the future STEM workforce. ASEE supports EHR programs including *Improving Undergraduate STEM Education* (IUSE) and *Innovations in Graduate Education* (IGE). The first is critical for preparing professional engineers and enhancing engineering educational experiences to broaden participation and retention, and the latter works to revolutionize graduate studies to best prepare students for STEM careers. ASEE supports the growth proposed in the President's Budget Request for NSF programs that foster participation in science and engineering from individuals from underrepresented groups.

NSF plays a key role ensuring the development of new tools for teaching engineering design and analysis skills, which are under-taught in today's K–12 classrooms. As noted in the 2009 National Academies report *Engineering in K–12 Education,* engineering education has received little attention yet has the potential to improve student learning and achievement in other areas of STEM, increase awareness of engineering careers, and increase technological literacy. Engineering's focus on design and analysis enhances problem solving, teaches students new ways to approach challenges, and encourages students to connect science and math topics to real-world applications—all skills critical to the future technical workforce. ASEE supports programs to fill workforce needs including Advanced Technical Education (ATE) that prepares advanced technicians for America's high-skills workforce and

graduate fellowships to create a pipeline of students knowledgeable and excited about engineering.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ASEE is supportive of the Administration's overall proposed increase of 6.3 percent to $24.7 billion in funding for the *National Aeronautics and Space Administration* (NASA), especially in its *Space Technology Mission Directorate* (STMD), which would see a 29.5 percent increase to $1.425 billion. Of importance to ASEE, STMD activities support the workforce development pipeline of future space engineers and technologists by engaging directly with the academic community through early career faculty programs, early-stage research grants, and university-led multidisciplinary research institutes. The disruptions to the STEM pipeline caused by the COVID–19 pandemic makes this work even more crucial. STMD's broad portfolio of activities helps to meet NASA's science objectives, establishes new commercial and academic partnerships, and stimulates the growth of the Nation's technology sector. STMD programs fill significant capability gaps for NASA and better position the agency to meet its long-term strategic goals in areas across all its directorates ranging from propulsion and power generation to materials science and high-performance computing. *ASEE applauds the Administration's support of STMD's vital role and urges the Committee to support STMD's ability to focus on a broad array of NASA technology challenges,* continue its engagement with the academic and private sectors, and keep long-term focus beyond specific near-term mission goals.

ASEE is also supportive of the Administration's proposed increase for *NASA's Office of STEM Engagement and* asks that the Committee support the proposed funding of $147 million for this office in fiscal year 2022 and beyond. NASA STEM Engagement programs inspire students to pursue engineering, science, and technology careers, and this office plays a vital role coordinating STEM education programs throughout the agency, including those at NASA centers. ASEE supports the continuation of the National Space Grant College and Fellowship Program (Space Grant), which supports university consortia in all 50 States, funding fellowships for engineering and other STEM students, while also offering important resources for faculty professional development and strengthening curricula. ASEE is also supportive of initiatives at the NASA Office of STEM Engagement to broaden participation of underrepresented groups in STEM and to bring engineering design and analysis experiences to K–12 students.

Conclusion: NSF education and research investments have truly transformed our world through engineering breakthroughs such as the internet, fiber-optics, and medical imaging technology. These investments keep our communities safe, lower healthcare costs, and spur our economy. Today, engineering research is opening possibilities through advances in areas such as artificial intelligence, biosensors, and advanced materials. We ask that you robustly fund NSF at $10.2 billion to support critical education and research programs that will be instrumental in the Nation's recovery from COVID–19. In addition, at NASA we urge you to fund proposed increases for NASA's Space Technology Mission Directorate and Office of STEM Engagement. Thank you for the opportunity to submit this testimony.

[This statement was submitted by Sheryl Sorby, President, and Norman Fortenberry, Sc.D., Executive Director.]

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) appreciates the opportunity to submit outside witness testimony for the Fiscal Year 2022 Commerce, Justice, Science and Related Agencies appropriations bill in support of increased funding for the National Science Foundation (NSF) and increased coordination of microbiome research by the White House Office of Science and Technology Policy in Fiscal Year 2022. ASM is one of the oldest and largest life science societies with 30,000 members in the U.S. and around the world. Our mission is to promote and advance the microbial sciences, including programs and initiatives funded by the Federal Government departments and agencies, by virtue of the integral role microorganisms play in human health and society. Microbial science is a cross-cutting endeavor, and our members' federally funded research is fundamental to advances in human health, agriculture, energy and the environment.

ASM calls on Congress to provide at least $10 billion for the National Science Foundation in Fiscal Year 2022.

Investments by Congress in NSF-funded discoveries have strengthened the science and technology sectors of the U.S. economy, boosted workforce development and ensured America's global market competitiveness. For over 70 years, the NSF has invested in basic research and education at the frontiers of science and engineering, including high risk and transformative research not supported by other funding sources. NSF is the only Federal agency that supports innovative basic research across all fields of science and engineering, and its support of multidisciplinary research and education is critical to promoting the next generation of scientists, improving the future of the Nation's science and engineering enterprise, and maintaining our global competitive edge. NSF is divided into seven directorates that support science and engineering research and education: Biological Sciences, Computer and Information Science and Engineering, Engineering, Geosciences, Mathematical and Physical Sciences, Social, Behavioral and Economic Sciences, and Education and Human Resources.

Microbes are at the foundation of scientific discovery, and the NSF is a key supporter of microbial science research, including microbiome research, discovery of emerging pathogens, and global collaboration. ASM members around the world are working to improve lives through research on human and animal health, agriculture, energy, the environment, and biothreats. NSFfunded research advances our understanding of the 70 percent of emerging human pathogens that have nonhuman origins, which pose serious threats to human health and global health security, as we have recently seen with the emergence of COVID–19. Investments in NSF research over several decades facilitated the rapid sequencing and identification of the SARS-CoV–2 virus weeks after its discovery in late 2019, which enabled infectious disease experts to begin work early on to combat the spread of the virus.

The NSF has excelled in its congressionally mandated mission "to promote the progress of science; to advance the National health, prosperity, and welfare; and to secure the National defense." The NSF's dedication to progress is particularly notable in the area of microbiome research. The Understanding the Rules of Life: Microbiome Interactions and Mechanisms program is one example of this innovative work. The broader NSF Rules of Life Big Idea aims to enable discoveries that will improve our understanding of interactions within different ecosystems, and to identify causal, predictive relationships across different scales (spatial, temporal, levels of biological organization and complexity) that help define the "rules" for how life functions. It also seeks to develop research tools and infrastructure to further Rules of Life research, and to provide the capacity to approach more complex research questions.

The goal of the Microbiome Interactions and Mechanisms program research within the Rules of Life Big Idea is to understand interactions and mechanisms that govern the structure and function of microbiomes. By integrating the wide range of accumulated data and information on microbiome structure and function, new causal models of interactions and interdependencies across scales and systems can be generated. To continue to achieve its goals, it is critical that the fiscal year 2022 appropriations bill robustly fund NSF.

ASM urges Congress to request an update from the Office of Science and Technology Policy on the implementation and continuation of the Interagency Strategic Plan for Microbiome Research.

Microbiome science aims to advance understanding of microbial communities (microbiomes) for applications in areas such as health care, food production, and environmental restoration to benefit individuals, communities, and the environment. Understanding of the microbiome has evolved significantly since the concept of the human microbiome emerged roughly two decades ago. Today it is understood that microbial communities exist on, in, and around people, plants, animals, soil, oceans, and the atmosphere, making the microbiome relevant to all living things. The rapid pace of discovery has led to greater technology needs and data sharing infrastructure.

Launched in 2016, the National Microbiome Initiative pledged $121 million in funding from Federal agencies and $400 million in total cash and in-kind contributions from 100 companies, foundations and academic institutions. As part of this initiative, the Federal Microbiome Interagency Working Group developed the Interagency Strategic Plan for Microbiome Research, providing recommendations for improving coordination of microbiome research among Federal agencies and between agencies and non-Federal domestic and international microbiome research efforts. The 5-year Strategic Plan envisioned coordinated microbiome research activities across 21 government agencies, set out interagency objectives, structure and operating principles, and noted several research focus areas. *As the Strategic Plan's term ends in 2022, OSTP should evaluate the progress made, consider whether the Federal*

investment has been adequate to fully realize the promise of this initiative, and begin the process to develop a strategic plan for interagency collaboration in this essential research for the next 5 years.

CONCLUSION

ASM is particularly grateful to Congress for its commitment to increased investments in the NSF in recent years. We urge Congress to revisit OSTP's past commitment to microbiome research and to increase funding for NSF in fiscal year 2022 to at least $10 billion. We look forward to continued Federal investment in microbe-powered innovation.

[This statement was submitted by Allen Segal, Director of Public Policy and Advocacy.]

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS

On behalf of our over 2 million supporters, The American Society for the Prevention of Cruelty to Animals (ASPCA) appreciates this opportunity to submit testimony to the Senate Appropriations subcommittee on Commerce, Justice, Science, and Related Agencies. Founded in 1866, the ASPCA is the first humane organization established in the U.S. and serves as the Nation's leading voice for animal welfare. We respectfully request that the subcommittee consider the following concerns when making fiscal year 2022 appropriations.

POLICE ENCOUNTERS WITH PETS

Media reports about violent encounters between law enforcement officers and pets—most often family dogs—are commonplace across the country. The ASPCA believes that the vast majority of these incidents are avoidable. The U.S. Department of Justice (DOJ) can assist in reducing these incidents by collecting national data around them and including techniques to handle police and dog encounters in law enforcement de-escalation trainings. Tragedies like this take a serious toll on communities, further eroding trust with law enforcement, escalating tense situations, and endangering bystanders. On April 11, the New Orleans Police Department (PD) shot and killed an 18-week-old rescue puppy in his yard while responding to a 911 call. On March 23, the Tampa PD shot the dog of the woman who had called them for help. On February 26, an officer with the Lynchburg PD in Virginia shot and killed a dog while attempting to take a man into custody for a mental health evaluation. On November 16 of last year, an officer with the Faulkner County Sheriff's Department in Arkansas shot and killed a family dog after responding to the wrong residence. Shootings involving pets often account for a significant percentage of the total firearms discharges in a particular agency. Data from some municipalities suggest that 25–75 percent of all police firearm discharges are directed at dogs.[1] One DOJ official estimated that several thousand dogs annually are killed by law enforcement officers and described the phenomenon as "an epidemic".[2]

Additionally, research reveals that these incidents take a disproportionate toll on communities of color. An analysis of officer-involved shootings in Los Angeles County revealed that between 28–46 percent of all firearms discharges were directed at dogs, and these shootings were geographically clustered in low-income communities of color.[3] This and other available data suggest that pit bull-type breeds are far more likely to be shot and killed than are other dog breeds. For example, from 2011 to 2014, police officers in Buffalo, New York killed 91 dogs—74 of which were identified as pit bull-type breeds.

Encourage documentation and tracking for incidents of police use of force against pets:

Use of force reporting requirements among State and local law enforcement agencies are inconsistent, and many agencies do not require documentation for use of force incidents involving pets. Federally, no nationwide data exists regarding the

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[1] Bathurst, Cynthia, Donald Cleary, Karen Delise, Ledy VanKavage, and Patricia Rushing. 2015. The Problem of Dog-Related Incidents and Encounters. Washington, DC: Office of Community Oriented Policing Services; https://cops.usdoj.gov/RIC/Publications/cops-p206-pub.pdf

[2] Griffin, David; "Can Police Stop Killing Dogs?." Police Magazine; Oct. 29, 2014; https://www.policemag.com/341722/can-police-stop-killing-dogs

[3] Stefano Bloch, Daniel E. Martínez. 2020. Canicide by Cop: A geographical analysis of canine killings by police in Los Angeles. Geoforum: 111. 142–154; https://www.sciencedirect.com/science/article/abs/pii/S0016718520300440

prevalence of these tragedies, or for officer-involved shootings more broadly. DOJ's Federal Bureau of Investigations operates a National Use of Force Data Collection, which allows law enforcement to voluntarily provide data on use-of-force incidents. The voluntary data, which currently reflects only 40 percent of total law enforcement officer population, does not, apparently, include incidents involving pets.[4] A publication by the DOJ's Office of Community Oriented Policing Services (COPS) recognized the lack of data on this issue and urged law enforcement agencies to examine questions like how often police officers discharge firearms in dog-related incidents and how many dogs have been killed to better understand and address this problem.[5] Understanding the scope and frequency of these incidents is fundamental to avoiding them.

Provide resources and training to de-escalate police encounters with pets and reduce violent incidents:

Sources indicate that officer trainings are beneficial to de-escalate situations with dogs without resorting to lethal force.[6] Several States including California, Texas, Tennessee, Ohio, Nevada, and Illinois mandate training and created programs on proper responses to encounters with dogs. The COPS office, which provides training for police departments on a variety of topics, published *The Problem of Dog-Related Incidents and Encounters* in 2011 and has adapted the contents to a video training series. Funding for the use of such trainings or creating incentives to do so could avoid these tragedies.

The ASPCA requests that the subcommittee recognize the impact of law enforcement's use of force in communities and the need to avoid such incidents by including the following report language in its FY22 Appropriations bill:

It has been estimated that thousands of dogs are killed annually by law enforcement officers. Many States and municipalities do not require that police shootings directed at pets be reported. However, data from some localities suggests that anywhere from 25–75 percent of all law enforcement firearms discharges are directed at dogs, and that these incidents are geographically clustered in low-income communities of color where police shootings involving people are also concentrated. Police shootings directed at pets escalate encounters with policed communities and erode trust in law enforcement. The Committee is concerned about the lack of data and reporting requirements for such encounters, and directs the U.S. Department of Justice to include incidents involving pets in any nationwide Federal database created to track law enforcement's use of force against people, or to provide Congress with a report within 180 days on how the Department can collect and maintain comprehensive data on law enforcement's use of force against people and pets, as well as any policy recommendations needed to implement that data collection. Further, the Committee encourages the U.S. Department of Justice to include training opportunities for police and dog encounters in the Community Oriented Policing Service's grants made available for de-escalation training.

[This statement was submitted by Nancy Perry, Senior Vice President, Government Relations.]

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

ADDRESSING THE NATIONAL SCIENCE FOUNDATION'S FISCAL YEAR 2022 BUDGET

The American Society of Plant Biologists (ASPB) submits this testimony for the official record to support at least $10.2 billion for the National Science Foundation (NSF) for fiscal year 2022. ASPB recognizes the difficult fiscal environment our Nation faces, but believes that sustained investments in scientific research represents a critical step toward economic recovery and continued global competitiveness for our Nation.

ASPB would like to thank the subcommittee for its consideration of this testimony and for its strong support for the research missions of NSF.

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[4] See "What is Collected?" https://crime-data-explorer.app.cloud.gov/officers/national/united-States/uof

[5] Bathurst, Cynthia, Donald Cleary, Karen Delise, Ledy VanKavage, and Patricia Rushing. 2015. The Problem of Dog-Related Incidents and Encounters. Washington, DC: Office of Community Oriented Policing Services; https://cops.usdoj.gov/RIC/Publications/cops-p206-pub.pdf

[6] Amendola, Karen, Valdovinos, Maria, Perea, Cesar. 2019. An Evidence-Based Approach to Dog Shootings in Routine Police Encounters: Regulations, Policies, Practices, and Training Implications. https://www.policefoundation.org/publication/reducing-dog-shootings-in-routine-police-encounters-regulations-policies-practices-and-training-implications/

ASPB, founded in 1924 as the American Society of Plant Physiologists, was established to promote the growth and development of plant biology, to encourage and publish research in plant biology, and to promote the interests and professional advancement of plant scientists in general. ASPB members educate, mentor, advise, and nurture future generations of plant biologists; they work to increase understanding of plant biology, as well as science in general, in K–16 schools and among the general public; they advocate in support of plant biology research; they work to convey the relevance and importance of plant biology; and they provide expertise in policy decisions world-wide. Overall, ASPB members, as representatives of the society, work to disseminate information and excitement about plant sciences, especially through ASPB's advocacy, outreach activities, conferences, and publications.

FOOD, FUEL, ENVIRONMENT, AND HEALTH: PLANT BIOLOGY RESEARCH AND AMERICA'S FUTURE

Plants are vital to our very existence. They harvest sunlight, converting it to chemical energy for food and feed; they absorb carbon dioxide and produce oxygen; and they are the primary producers on which most life depends. Indeed, plant biology research is making many fundamental contributions in the areas of energy security and environmental stewardship; the continued and sustainable development of better foods, fabrics, and building materials; and in the understanding of biological principles that underpin improvements in the health and nutrition of all Americans.

Plant science has become that backbone of agricultural innovation, and a thriving agricultural sector has become a cornerstone for American economic success. Agriculture and agriculture related industries comprise 5.4 percent of the U.S. GDP, contributing nearly $1 trillion and 21 million jobs to the economy.[1] In fact, despite persistent U.S. trade deficits, there has been a surplus in agricultural trade since 1960. This surplus is projected to continue, in spite of projected decreases in planted acres of major crops.[2] These projections rely on steady increases in yields, a breakthrough that is wholly dependent upon continued fundamental and applied agricultural research in crop science and plant biology. To maintain and increase U.S. agricultural productivity, critical investments in basic biological sciences are needed.

In particular, plant biology is at the interface of numerous scientific breakthroughs. For example, with high throughput experimental approaches facilitating extraordinary syntheses of information that are NSF-supported, plant biologists are using computer science applications to make tremendous strides in our understanding of complex biological systems, ranging from single cells to entire ecosystems. Understanding how plants function ultimately will result in better and more productive crops, new sources of fuel, and the development of better medicines to treat diseases like cancer.

Despite the significant positive impact plants have on our Nation's economy and in addressing some of our most urgent challenges, including food and energy security, Federal investments in fundamental plant biology research are modest. Nevertheless, plant scientists have maximized and leveraged this funding to begin to understand the basic functions and mechanisms of plants, providing a foundation for vital advances in practical applications in agriculture, health, energy, and the environment.

ROBUST FUNDING FOR THE NATIONAL SCIENCE FOUNDATION

ASPB encourages strong support for the Directorate of Biological Sciences (BIO) and proportional funding increases across all of the scientific disciplines NSF supports. As scientific research becomes increasingly interdisciplinary with permeable boundaries, a diverse portfolio at NSF is needed to maintain transformational research and innovation. NSF funding for plant biology specifically enables the scientific community to address cross-cutting research questions that could ultimately solve grand challenges related to a sustainable food supply, energy security, and improved health and nutrition.

NSF BIO is a critical source of funding for scientific research, providing the majority of the Federal support for non-medical basic life sciences research at U.S. academic institutions and beyond. BIO supports research ranging from the molecular and cellular levels to the organismal, ecosystem, and even biosphere levels. These investments continue to have significant pay offs, both in terms of the knowledge directly generated and in deepening collaborations and fostering innovation among communities of scientists.

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[1] https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/

[2] https://www.ers.usda.gov/webdocs/publications/92600/oce-2019-1.pdf?v=3630.9

The Biological Sciences Directorate's *Plant Genome Research Program (PGRP)* is an excellent example of a high impact program that has laid a strong scientific research foundation for understanding plant genomics as it relates to energy (biofuels), health (nutrition and functional foods), agriculture (impact of changing climates on agronomic ecosystems), and the environment (plants' roles as primary producers in ecosystems). *ASPB asks that the PGRP be funded at the highest possible level and have sustained funding growth to address 21st century challenges.*

ASPB is also encouraged by the ongoing efforts of the *Reintegrating Biology* initiative. The Society hopes that these efforts will result in innovative, cross-disciplinary efforts that advance both plant science and biological research as a whole. Finally, ASPB is very pleased to see NSF increase its support for *biotechnology,* both within BIO and as proposed in the new *Technology, Innovation, and Partnerships Directorate.* Investments in biotechnology will transform agriculture, energy, and healthcare, and fundamental and applied plant science research have roles to play in each area.

Without significant and increased support for BIO and NSF as a whole, promising fundamental research discoveries will be delayed and vital collaborations around the edges of scientific disciplines will be postponed, thus limiting the ability of the U.S. to respond to the pressing scientific problems that exist today and the new challenges on the horizon. Addressing these scientific priorities would also help to improve the competitive position of the U.S. in a global marketplace.

CONTINUED SUPPORT FOR NSF EDUCATION AND WORKFORCE DEVELOPMENT PROGRAMS

As discussed above, many of the challenges brought by a changing world will need be addressed specifically by plant scientists. A significant—but sustainable—increase in crop productivity will be needed to match the demand for food expected from the rate of population growth. At the same time, climate change will present new trials for crops and other plant ecosystems. These challenges will require efforts to increase productivity beyond current practices, including improvement in crop water use efficiency and enhanced crop photosynthesis efficiency and performance, to name just a few approaches. More knowledge and innovation will be needed to replace chemicals from non-renewable sources (from fuels to biomedical applications) with plant-derived metabolites. These types of innovations will require contributions from basic and applied plant science fields and collaboration from other sciences and engineering.

To tackle these challenges, a strong and diverse community of plant scientists, with increased involvement from women and marginalized scientists, will be needed. However, the current training pipeline does not appear prepared to ensure the availability of this workforce. The number of Ph.D. degrees awarded in the U.S. in biomedical sciences in the last two decades has increased at an unsustainable rate, even triggering warnings from members of the National Academy of Sciences; however, this trend has not been paralleled by increases in plant-related Ph.D. degrees. In fact, plant science doctoral degrees, both basic and agronomy-related, have remained stagnant during this time period. Clearly, a strong investment in plant science research, both basic and applied, renewed efforts to transform public perception of plant biology and plant biologists, and a push to increase the number of students entering the pipeline leading to plant science degrees are necessary to change these trends. Developing the workforce that will contribute the solutions to future challenges is urgent.

The NSF is a major source of funding for the education and training of the American scientific workforce and for understanding how educational innovations can be most effectively implemented. NSF's education portfolio impacts students at all levels, including K–12, undergraduate, graduate, and postgraduate, as well as the general public.

ASPB urges the subcommittee to support expanding NSF's fellowship and career development programs—such as the Postdoctoral Research Fellowships in Biology, the Graduate Research Fellowship (GRF) and the Faculty Early Career Development (CAREER) programs—thereby providing continuity in funding opportunities for the country's most promising early career scientists.

ASPB urges support for NSF to further develop programs aimed at increasing the diversity of the scientific workforce by leveraging professional scientific societies' commitment to provide a professional home for scientists throughout their education and careers and to help promote and sustain broad participation in the sciences. Discrete focused training and infrastructure support programs for Hispanic Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities remain vitally important, because they foster a scientific workforce that reflects the U.S. population.

ASPB urges support for education research that enhances our understanding of how educational innovations can be sustainably and most effectively implemented in a variety of settings. NSF Education and Human Resources programs provide opportunities to expand NSF's research and evaluation efforts to address scale-up and sustainability. *ASPB encourages continued support for education research programs within NSF's Education and Human Resources portfolio with a focus on understanding how previous investments in educational strategies can be made most effective.*

Grand research challenges will not be resolved in a year, an administration, or a generation, but will take continued attention and investment at Federal research agencies, such as the NSF, over decades.

Thank you for your consideration of ASPB's testimony. For more information about ASPB, please visit www.aspb.org.

PREPARED STATEMENT OF THE ANIMAL WELFARE INSTITUTE

FISCAL YEAR 2022 FUNDING PRIORITIES FOR THE U.S. DEPARTMENT OF COMMERCE (DOC) AND THE U.S. DEPARTMENT OF JUSTICE (DOJ).

U.S. DEPARTMENT OF COMMERCE

North Atlantic Right Whale-Related Research and Development—$20 million

In 2020, North Atlantic right whales were designated as critically endangered by the International Union for Conservation of Nature (IUCN). Elevated mortalities of the species from entanglements in fishing gear and vessel strikes have been declared an Unusual Mortality Event (UME) by the National Oceanic and Atmospheric Administration (NOAA) since 2017. The annual documented rate of anthropogenic mortality and serious injury, due to both entanglement in gear and vessel strikes, has exceeded the population's potential biological removal level (PBR) since 1995.

In October 2020, scientists from the New England Aquarium released a new population estimate for North Atlantic right whales, indicating that the population numbered only 356 as of the end of 2019.[1] Of these 356 whales, researchers estimate 70 breeding females remain. Without intervention, the current combination of low birth rates and increased mortalities could leave the species functionally extinct within 20 years.[2]

Right whales are extremely vulnerable to being caught in the vertical buoy lines used in lobster and crab trapping gear. Entanglement can lead to drowning, reduced mobility, and, in some cases, a long, painful death from starvation. Collisions from vessels of all sizes can also cause serious injuries, such as blunt force trauma, propeller cuts, and broken bones. Three North Atlantic right whale calves were killed or seriously injured by vessel strikes in U.S. waters in the last 13 months alone. In February 2021, an adult whale was confirmed dead due to injuries from entanglement. Two other entangled whales have been added to the *serious injuries list* this year.

Studies have shown that mortalities from known entanglements have continued to increase: from 21 percent (1970–2002) to 51 percent (2003–2018).[3] Entanglements caused as many as 85 percent of diagnosable deaths from 2010 to 2015. In February 2021, a study coauthored by leading North Atlantic right whale scientists found that from 1990–2017, observed carcasses only accounted for 36 percent of North Atlantic right whale mortalities.[4] These "cryptic mortalities," i.e., deaths caused by human activities without an observed carcass, represent a larger proportion of the total mortality than previously believed.

The final fiscal year 2021 appropriations package included $5 million for North Atlantic right whales within the Marine Mammals, Sea Turtles, and Other Species line item. Within this funding, $1 million was directed to the National Oceanic and

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[1] New England Aquarium (2020) Statement on North Atlantic right whale population estimate. October 29, 2020. Available at https://www.neaq.org/about-us/news-media/press-kit/press-releases/statement-on-north-atlantic-right-whale-population-estimate/

[2] Cecco, L. (2020). Humans pushing North Atlantic right whale to extinction faster than believed. The Guardian. October 30, 2020. Available at https://www.theguardian.com/environment/2020/oct/30/north-atlantic-right-whale-extinction-faster-than-believed

[3] Sharp, S, et.al (2019). Gross and histopathologic diagnoses from North Atlantic right whale Eubalaena glacialis mortalities between 2003 and 2018. Diseases of Aquatic Organisms, 135(1), 1–31. doi:10.3354/dao03376)

[4] Pace, R. et al. (2021). Cryptic mortality of North Atlantic right whales. Conservation Science and Practice. 3. 10.1111/csp2.346.

Atmospheric Administration (NOAA) for the continuation of a pilot program developing and field-testing new fishing gear technologies designed to reduce entanglements.

We appreciate Congress' concern for this species and trust that it will recognize that a substantial increase in funding is necessary if we are to save North Atlantic right whales from extinction. Along with 50 other NGOs, AWI submitted a letter to House and Senate CJS Appropriations subcommittees that included a proposed spending plan. Within that plan, we believe funding should be appropriated to NOAA to develop and implement new rules aimed at reducing the mortality rate of North Atlantic right whales by vessel strikes, fishing-gear entanglements, and other threats. There must also be investment in reducing vessel-strike risk in high-traffic areas as well as a transition to whale-safe fishing gear. We believe the pilot program to refine and field test innovative fishing gear technologies, such as ropeless gear, should be expanded, including the development of geolocation technologies. Lastly, surveys and monitoring, enforcement, disentanglement, stranding response, and plankton recorder surveys are crucial to the conservation of this species.

We encourage Congress to direct investment to the development of ropeless technologies instead of expensive, short-term investments in "weak rope." The use of 1,700-lb breaking strength lines (known as "weak rope") may decrease the severity of entanglement injuries suffered by right whales but does not reduce the likelihood of entanglement in the first place nor the sub-lethal impacts of entanglement on whales. This gear also does not reduce the risk of serious injury or mortality for right whales who are less than 2 years old.[5]

NOAA estimates Americans are willing to pay $4.38 billion annually for the recovery of the endangered North Atlantic right whale. Further, in 2008, this species generated an estimated $2.3 billion in sales in the whale watching industry and across the broader economy.[6] Research has found large whales are worth about $2 million each over their lifetimes. This value is based on their contributions to carbon sequestration, which combats climate change, as well as their ability to enhance fisheries and provide ecotourism value. Overall, the estimated economic value of the planet's whale population is over $1 trillion.[7]

If we are to save this species, it will require investment and cooperation among Congress, agencies, scientists, and industry. We hope the subcommittee on Commerce, Justice, Science and Related Agencies recognizes the urgency of this situation and invests in protections for North Atlantic right whales.

Unusual Mortality Event Fund—$4 million with at least $750,000 dedicated to the current UME of Atlantic Florida manatees

Marine mammals are important indicator species of ocean health. Monitoring the health of marine mammals, especially during Unusual Mortality Events (UME), can reveal emerging threats, potential impacts of human activities, and the effectiveness of management actions. A UME is defined as "a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response." There are currently *10 active* UMEs around the country in every ocean (Alaska ice seals, West Coast gray whales, Northeast pinnipeds, Southwest Florida bottlenose dolphins, Atlantic minke whales, North Atlantic right whales, Atlantic humpback whales, Guadalupe fur seals, Atlantic Florida manatees, and Florida East Coast manatees). In the newest UME to be declared, the 2021 Atlantic Florida manatee, nearly 750 manatees have died this year alone. Rescue organizations are hampered by the lack of facilities and funds for responding to overwhelming numbers of live manatees in need of rescue and rehabilitation.

Since 1991, 70 marine mammal UMEs have been declared. The UME Contingency Fund was established through the Marine Mammal Protection Act to enable the National Marine Fisheries Service to reimburse marine mammal stranding network partners for costs related to caring for and treating live animals that strand as part of UMEs; collecting, preparing, and sending biological samples to the National Marine Mammal Tissue Bank and other diagnostic laboratories to investigate the causes of UMEs; and collecting important marine mammal health data to inform and improve future UME responses and marine conservation. Although Congress created this fund in 1992, it provided appropriations only in 2005; all other con-

[5] Knowlton et al. (2016).

[6] NOAA Fisheries (2020, February 24). Protected species economics research. Retrieved from https://www.fisheries.noaa.gov/national/socioeconomics/protected-species-economics-research

[7] Chami, R., Cosimano, T., Fullenkamp, C., & Oztosun, S. (2019). Nature's solution to climate change. International Monetary Fund: Official Website./Finance&Development, 56(4), 34–38. Retrieved from https://www.imf.org/external/pubs/ft/fandd/2019/12/natures-solution-to-climate-change-chami.htm

tributions to the Fund have been through voluntary assistance. Considering the growing number of UMEs, $4 million should be allocated to the Unusual Mortality Event Contingency Fund to enable robust marine mammal stranding response efforts, with $750,000 dedicated to the current Atlantic Florida manatee UME.

John H. Prescott Marine Mammal Rescue Assistance Grant Program—$4 million

The John H. Prescott Marine Mammal Rescue Assistance Grant Program (Prescott Grant Program), a program under NMFS, provides competitive grants to marine mammal stranding network organizations to do the following: (1) rescue and rehabilitate sick, injured, or distressed live marine mammals, and (2) investigate the events surrounding, and determine the cause of, the death or injury of marine mammals. Over the past 20 years, the Prescott Grant Program has been vital to protecting and recovering marine mammals across the country while also generating critical information regarding marine mammals and their environment. As the sole source of Federal funding for the National Marine Mammal Stranding Network, which is comprised of over 90 member organizations within 23 States, robust funding is required for the Prescott Grant Program to enable it to continue its vital work.

Enforcement and Seafood Import Monitoring Program (SIMP)—$4 million

The Seafood Import Monitoring Program (SIMP) was established in 2016 to require U.S. importers of certain fish and fish products to provide and report key data, with the aim of uncovering illegal, unreported, and unregulated (IUU) fishing and/or seafood fraud and preventing it from entering US commerce. The program initially oversaw imports of 11 species, including sharks and sea cucumbers, two marine species that are increasingly threatened by IUU fishing. In 2019, two additional species, shrimp, and abalone, entered SIMP, thereby doubling the volume of imported products covered by SIMP. The addition of shrimp has implications for the critically endangered vaquita, of which only about 10 remain. The use of illegal gillnets for catching shrimp in the Gulf of California, and the subsequent bycatch of vaquitas, has been a major factor in the latter species' decline.

A 2021 report *"Seafood Obtained via Illegal, Unreported, and Unregulated Fishing: U.S. Imports and Economic Impact on U.S. Commercial Fisheries,"* compiled by the U.S. International Trade Commission found that $2.4 billion worth of seafood imports derived from IUU fishing was imported in 2019 (11 percent of total seafood imports). Over 13 percent of the U.S. imports caught at sea were estimated to be caught using IUU fishing practices. Top species included swimming crab, wild-caught warmwater shrimp, yellowfin tuna, and squid. The report noted that IUU-sourced seafood is a threat to the livelihood of U.S. fishermen. These practices also pose risks to marine ecosystems, public health, and human rights.

In January 2020, the U.S. Government allocated $8 million to fight IUU fishing and bolster SIMP as part of the U.S.-Mexico-Canada trade agreement (USMCA) that was approved in January 2021. As part of the agreement, funding will go to NOAA to help it cooperate with the Mexican Government in fighting illegal fishing through 2023. Additional funding of $4 million is necessary to ensure full enforcement of SIMP in fiscal year 2022.

Marine Mammal Commission (MMC)—$5.25 million

The Marine Mammal Commission (MMC) is an independent Federal agency established by Congress in 1972 under the MMPA. Responsible for overseeing the proper implementation of the MMPA, the MMC provides comprehensive, independent, science-based oversight of all Federal and international policy and management actions affecting marine mammals. The MMC's work is crucial to maintaining healthy populations of marine mammals, including whales, manatees, dolphins, seals, sea otters, walruses, and polar bears, and ensuring their survival for generations to come. Additionally, the MMC seeks to ensure that Alaska Natives can meet their subsistence needs through hunting of marine mammals. We are grateful that Congress rejected last year's budget request defunding this agency and instead funded the MMC at $3.769 million in fiscal year 2021. In order for the MMC to fully fulfill its obligations, we ask that $5.25 million be appropriated for fiscal year 2022.

U.S. DEPARTMENT OF JUSTICE

Environment and Natural Resources Division/Environmental Crimes Section—Additional $2 million

AWI asks the subcommittee to provide an *additional* $2 million, over and above the amount that would otherwise be appropriated, to the Environmental Crimes Section of the Department of Justice's Environment and Natural Resources Division, to be designated for the Section's work on animal cruelty crime.

Congress has taken significant steps in the last decade to strengthen Federal laws to protect animals from cruel treatment. For those efforts to be meaningful, it is imperative that the Federal Government's enforcement efforts be robustly supported. The attorneys in the Environmental Crimes Section are tasked with ensuring that justice is served when the Federal statutes and enforcement regimes that provide for the humane treatment of captive, farmed, and companion animals across the country are violated. These laws include the Animal Welfare Act, the Horse Protection Act, the Humane Methods of Slaughter Act, the 28-Hour Law, the Animal Crush Video Statute, the Animal Fighting Venture Prohibition Act, and, since 2019, the Preventing Animal Cruelty and Torture Act.

This is a tremendous amount of responsibility, and it is a responsibility that both Congress and the American public expect to be executed vigorously. The resources available to bring criminal prosecution under these laws has not kept pace with the improvements made in the laws. Given the increased workload the Section has taken on in just the last couple of years, a $2 million increase in its funding is warranted.

[This statement was submitted by Nancy Blaney, Director, Government Affairs.]

PREPARED STATEMENT OF THE ANTI-DEFAMATION LEAGUE

FUNDING TO COUNTER DOMESTIC VIOLENT EXTREMISM, HATE CRIMES, AND DISCRIMINATION IN VOTING

On behalf of the Anti-Defamation League (ADL), I write to request that you designate increased funding for the department of Justice's efforts to combat domestic violent extremism, prevent and prosecute hate crimes against Jews, Jewish institutions, and other targeted communities, and challenge discrimination in voting by vigorously enforcing the Voting Rights Act.

Countering Violent Domestic Extremism

On January 6, we watched as an insurrection fueled by violent conspiracy theories and white supremacy gripped the Nation and attacked our democracy. Unfortunately, this act of domestic terrorism was not a surprise; it is a threat ADL has been warning about for many years, and one we had warned law enforcement about once this specific threat became clear, even before the tragic events unfolded.

ADL recommends that Congress make investments that adapt to the threat from domestic extremists, which is severe and growing. The majority of violence committed against Americans by extremists is now homegrown, and we must reorient our counterterrorism capabilities accordingly. To address this threat, the Congressional Budget Office estimates that an additional 175 FBI field agents, 45 additional employees, 25 U.S. Attorney office personnel, and 18 additional DHS analysts are needed, as well as a budget to support reporting and coordination. These funds for personnel, training, and reporting will help catalyze a range of activities to better understand the domestic terror threat, to ensure resources are used proportionate to the threat posed, and to work across agencies to better prepare to keep communities safe. The Domestic Terrorism Prevention Act (H.R. 350/S. 963) would in part ensure resources are used based on the threat of a terrorist movement. While we work to support the passage of the DTPA, personnel for the offices and training opportunities for State and local partners can and should be funded separate and apart from the bill. ADL supports $11 million in fiscal year 2022 and an estimated $184 million over 5 years to increase resources and staffing to help counter domestic terrorism. ADL also requests that report language reflect the need for transparency and threat-proportionate appropriations.

In addition, ADL recommends increased investment in research that closes gaps in our ability to prevent domestic extremism that will otherwise endure as an increasingly dangerous and destabilizing force in American communities. Data should drive policy. ADL requests $20 million above current levels to the Office of Justice Programs, dedicated specifically to research and data related to domestic violent extremism issues.

Eliminating Extremism in Law Enforcement

ADL urges the Committee to recognize and address the fact that some public safety officers are extremists, as evidenced by the participation of active law enforcement personnel in the attempted insurrection of January 6. Additionally, FBI assessments dating back more than 15 years, among other sources, have noted that such extremists seek out positions in law enforcement and work to recruit law enforcement personnel into their ranks in order to gain access to sensitive security-

related information as well as tactical knowledge and training. The consequences of this infiltration are potentially severe, ranging from deterioration of police-community relations to destruction, conflict, and death resulting from extremist officers' activities. ADL requests that the Committee encourage the Justice Department to provide the highest priority to Community Oriented Policing Services (COPS) program applicants and law enforcement agencies that request support for screening applicants and personnel for persistent racism and/or violent extremist ideologies or affiliations, and further encourage the Department to prioritize COPS grants to program applicants and law enforcement agencies that require their employees to complete training on extremism. ADL also asks that the Committee support improved security clearance policies, procedures, and trainings to ensure that individuals whose possible adherence to violent extremist ideologies raises questions about their judgment or trustworthiness do not have security clearances, including directing the Department to report no later than 90 days after enactment of this act on its progress in developing these improved policies, procedures, and trainings.

Clearinghouse for Online Extremism

With domestic violent terrorism posing a growing threat, we must seek creative ways to address the critical role that social media plays in fueling the rise of extremism. However, we must not empower law enforcement to engage so thoroughly in social media investigations that civil liberties would be at risk. ADL proposes the creation of an independent nonprofit organization, mirroring the founding of the National Center for Missing and Exploited Children, to investigate online threats proactively with careful parameters to ensure that the broad nature of these investigations does not provide surveillance powers to law enforcement, but is independent. ADL requests $500,000 to the National Institute of Justice for a six-month study into the feasibility, costs, and operational options for an independent clearinghouse for online extremist content.

Strengthening Hate Crimes Data Collection

A more complete understanding of where, when, and against whom hate crimes occur is a necessary component of an effective and coordinated campaign to eradicate this scourge. In the nearly 30 years during which the FBI has compiled data pursuant to the Hate Crime Statistics Act, however, DOJ has yet to produce information that paints an accurate and comprehensive picture of hate crime. Multiple factors contribute to deficits in our knowledge about this phenomenon, including victimized communities' distrust and avoidance of law enforcement agencies; lack of training for officers in recognizing and investigating bias motivations; and frontline agencies' limited capacity to maintain and share records with DOJ combined with the lack of a reporting mandate. Congress can and must support stakeholders in overcoming these challenges by providing funding for data improvement programs that we expect will soon be authorized by the Jabara-Heyer NO HATE Act. ADL recommends that you provide total funding of at least $15 million for grant programs to State, local, and Tribal law enforcement agencies to implement the National Incident-Based Reporting System, to create State-run hate crime reporting hotlines, and to conduct training and develop protocols for identifying, analyzing, investigating and reporting hate crimes. In addition, we urge you to adopt report language that urges DOJ to support hate crime statistics improvement through its other funding programs including the Edward Byrne Memorial Justice Assistance Grants program, as well as language that urges the FBI to increase its outreach to, and consider developing awards or other incentives for, State, local, and Tribal law enforcement agencies, to encourage them to provide substantive and accurate hate crime statistics.

State and Local Police Training on Recognizing and Investigating Hate Crimes

ADL is alarmed at increases in reports of hate crime. In spite of declining law enforcement agency participation, the FBI's Hate Crime Statistics Act reports have documented year-to-year growth in the number of recorded hate crimes in recent years, culminating in the most deadly year on record in 2019, in which at least 51 people lost their lives in bias-motivated attacks. Anecdotal data captured by community-based organizations and surveys that ask Americans about their subjective experiences indicate that hate crime is a far more widespread and devastating phenomenon than even the FBI's report demonstrates. Behind each victim is an entire community of people who share the characteristics for which the person was attacked, and who experience the fear and instability that these acts cause. The Federal Government's leadership is indispensable to the critical task of improving effectiveness at tracking, mitigating the harms caused by, and ultimately, preventing destructive bias-motivated aggression. ADL requests $100 million for grants to State, local, and Tribal law enforcement agencies to conduct educational outreach and

training on hate crimes and to investigate and prosecute hate crimes, as authorized by section 4704 of the Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act (Public Law 111–84).

Community Relations Service

The Community Relations Service saves lives and preserves community cohesion, and must be taken to scale to meet expanding demand resulting from COVID–19-related hate crimes targeting the Asian-American Pacific Islander community, scapegoating of Jews, Muslims, and members of immigrant communities for the actions of foreign nations and entities, and other increases in discrimination and hate. CRS's efforts are symbolically important and practically effective. For example, after a gunman killed a worshipper and wounded three others at the Chabad of Poway, CA, on April 27, 2019—exactly 6 months after the shooting at the Tree of Life Synagogue in Pittsburgh—members of the surrounding community asked CRS to help reestablish community safety and rebuild residents' confidence that they could safely attend religious services. Within days of the shooting, CRS brought the local U.S. Attorney's Office together with leaders of local faith communities to assess tensions, identify concerns, and share best practices for addressing hate crimes and protecting religious institutions. CRS served as a liaison between community stakeholders and the State and Federal agencies involved in investigating the shooting and also worked with stakeholders to convene continuing conversations, including a Bias Incidents and Hate Crimes forum held by an interfaith coalition of San Diego-area religious communities and an August 2019 training that brought the U.S. Attorney's Office back together with faith community leaders to build capacity to prevent and respond to hate crimes. ADL supports $40 million for the Community Engagement Relations program to offer services in more communities in need.

Voting Rights Act Enforcement by the Voting Section

Before, during, and after the 2020 Presidential Election, disinformation about threats to election security and integrity spread widely, and in significant part due to some political figures' repeated public critiques of normal procedures such as mail voting and of extraordinary measures undertaken to avoid COVID–19-related perils, including proactive mailing of mail ballot applications and expansion of early voting hours and periods. Election administrators, Federal and international experts at agencies like the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency, and independent audits of paper records of votes cast have all affirmed that election results were valid, and no significant or widespread fraud or irregularities occurred. Nonetheless, according to the Brennan Center for Justice, as of March 24, 2021, State lawmakers had introduced 361 bills that would restrict access to the ballot in 47 States' current legislative sessions. These measures take direct aim at aspects of the voting process that disproportionately affect voters of color and preserving equal access to elections in 2021 and beyond will depend upon the strength and readiness of the most capable and expert voting rights prosecutor in the Nation, the Civil Rights Division's Voting Section.

The Voting Section requires expanded capacity to respond to the States and localities that already have adopted discriminatory voting restrictions or are poised to follow suit. The Voting Section also will soon undertake monitoring, evaluation, and enforcement of anti-discrimination standards in the post-2020 Census redistricting cycle which will be the first to occur in the absence of the protective mechanisms of the Voting Rights Act's fully-functional preclearance process. As a result, Section attorneys will not receive explanation and analysis of new district maps from jurisdictions with long histories of acting deliberately to limit marginalized voters' opportunity to elect representatives of their choice, and will instead have to exponentially increase original review of as many as hundreds, or thousands, of new plans. As we consider the work before the Voting Section, finally, we are mindful of the need for more capacity to ensure the effective implementation of Section 203 of the Voting Rights Act after new coverage determinations are published in calendar year 2021. To manage these critical tasks, ADL requests an additional $5 million for the Civil Rights Division for additional attorney positions to conduct Voting Rights Act enforcement activities.

[This statement was submitted by Max Sevillia, Vice President, Government Relations, Advocacy, and Community Engagement.]

PREPARED STATEMENT OF THE ASSOCIATION FOR PSYCHOLOGICAL SCIENCE (APS)

SUPPORTING INCREASED APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION (NSF)

HIGHLIGHTS OF APS RECOMMENDATIONS FOR FISCAL YEAR 2022

—*APS supports the Administration's recommended funding level of $10.2 billion for NSF in fiscal year 2022.* In immediate terms, increased funding is necessary in fiscal year 2022 to help the research community recover from COVID–19 and its effects on research, education, and the professional development of the next generation of scientists. In the longer term, a bold approach to NSF funding advances NSF's transformational Big Ideas initiatives; protects core programs that sustain science and engineering fields; builds and operates world-class research infrastructure, including the human capital that conducts and supports research; and trains a diverse, inclusive future science, technology, engineering, and mathematics (STEM) workforce so that the U.S. can remain globally competitive.

—NSF's Directorate for Social, Behavioral, and Economic (SBE) Sciences conducts research that increases our fundamental understanding of human development, cognition, behavior, and more. One of the best ways to mitigate the crises created by the COVID–19 pandemic is through an understanding of human behavior. Supporting SBE is important to our ability to recover from the problems arising from COVID–19 as well as to prevent or mitigate economic, health, and security problems arising from other national and international problems. Scientific research supported by SBE also enables discovery in other critical areas that range from addressing the needs of an aging population, to strengthening racial equity and limiting bias, to preparing our military with the insights it needs to understand behavior in a changing world. Through its various core programs, as well as its contributions to cross-directorate NSF investments, SBE supports approximately 5,000 scientists, educators, and students in a typical year. Unfortunately, SBE has often been a popular target for budget cuts and messaging amendments. *APS urges the Committee to recognize the important contributions of NSF's Social, Behavioral, and Economic Sciences Directorate with supportive report language and implied funding increases.*

—NSF's Graduate Research Fellowship Program (GRFP) recognizes and supports outstanding graduate students in NSF-supported STEM disciplines who are pursuing research-based master's and doctoral degrees at accredited U.S. institutions. The program encourages the best and brightest students—a diverse cohort—to pursue STEM as a career and recognizes those individuals who propose to conduct meritorious scientific research capable of broad impacts; it sets promising students on a trajectory for success in their scientific careers. Given the significant disruptions that COVID–19 has caused for the future careers of student scientists, NSF should be strengthening its support for students. *APS urges the Committee to provide the resources necessary to fund no less than 2,000 awards in fiscal year 2022 and urges the program to grow to 3,000 in future years.*

STATEMENT OF APS EXECUTIVE DIRECTOR

Madam Chairwoman and Members of the subcommittee, thank you for the opportunity to provide testimony as you consider funding priorities for Fiscal Year 2022. I am Robert Gropp, Executive Director of the Association for Psychological Science (APS). APS is a nonprofit scientific organization dedicated to the advancement of scientific psychology for the benefit of science and society. APS's 30,000 members are scientists and educators at the Nation's universities and colleges, conducting research supported by the National Science Foundation (NSF). The research funded by NSF's Social, Behavioral, and Economic Sciences Directorate (SBE) provides a fundamental understanding of the human condition. As the world deals with the COVID–19 pandemic and its effects, essential tools at our disposal are behavioral in nature, bringing the science supported by SBE to the forefront. SBE-supported scientists develop and employ rigorous methods to discover principles of human behavior at levels ranging from cells to society and from neurons to neighborhoods. We urge the Committee to include supportive report language and implied funding increases for the SBE Directorate in the Fiscal Year 2022 CJS Appropriations bill and report.

Madam Chairwoman, APS joins the scientific community in supporting a fiscal year 2022 appropriation of $10.2 billion for NSF. This funding level would advance innovation, discovery, and productivity; help us face current and future societal

challenges; and boost our economy given the ways science, engineering, and math support so many of our country's jobs.

RECOGNIZING THE LEADERSHIP OF THE SUBCOMMITTEE

Madam Chairwoman, as the leading voice for scientific psychology in all its forms, APS recognizes and appreciates your leadership and the leadership of this subcommittee in supporting Federal research. We applaud your commitment to maintaining our Nation's economic growth, national security, and overall global competitiveness through investment in science. We are grateful for the appropriations the agency received in fiscal year 2021, yet we respectfully recognize that more is required to address the effects of historical underinvestment in fundamental research in the United States. According to NSF, in fiscal year 2020, 42,727 applications were received, but only 12,172 were funded. Many of these unfunded applications were deemed meritorious by independent scientific reviewers. When deserving proposals go unfunded, scientific progress and the resulting benefits to society are delayed or lost.

The potential impact of these missed opportunities is even starker when considering the return on investment in scientific research and the significant investments that other nations are making in comparable research areas. According to the National Science Board's 2020 Science and Engineering Indicators, "Where once the U.S. was the uncontested leader in science and engineering, we are now playing a less dominant role." The United States was the largest R&D performer in 2017, followed by China. To remain at the forefront of scientific discovery and continue leading the world in science and engineering, we must invest strategically and robustly now. NSF increases the competitiveness and growth of our country, but also of each State as well. In fiscal year 2020, for example, New Hampshire research institutions were competitively awarded a total of $42,904,000 in NSF grant funding, and Kansas research institutions were awarded a total of $44,239,000.

FUNDING FOR THE NATIONAL SCIENCE FOUNDATION AND POLICY ISSUES

As previously noted, APS recommends an fiscal year 2022 funding level of $10.2 billion for NSF, a funding level that makes clear that scientific research is a national priority.

APS does not recommend that Congress allocate funding at the directorate level. We do encourage Congress to provide sufficient funding to allow NSF to make additional and strategic new investments in SBE. As mentioned previously, this research is key to responding to COVID–19 and its effects, including the ways the pandemic has affected disproportionately those from disparity groups. Reports from NSF indicate that the SBE community is applying at record rates for funding to address behavioral elements of COVID–19, and that these applications are exceptionally meritorious and capable of broad and immediate impacts.

In addition to offering potential solutions to COVID–19's effects, SBE provides critical support to the behavioral science community broadly. Despite being the smallest directorate at NSF, SBE funds 55 percent of all university-based social and behavioral science research in the United States. In 2020, SBE awarded approximately $1.9 million and $983,000 in fiscal year 2020 research grants to the Chairwoman and Ranking Member's home States of New Hampshire and Kansas, respectively. We therefore urge the Committee include the following report language:

> *Social, Behavioral, and Economic Sciences (SBE).*—The Committee supports SBE and recognizes the fundamental importance of the research it supports in advancing scientific understanding of critical challenges facing our Nation, including increased misinformation, polarization, and bias. SBE sciences also afford insights into advancing public health, defense and security, education and learning, and the interface of humans and technology. SBE funds over half of our Nation's university-based behavioral science research, yet it is among the smallest NSF research directorates. Because the Committee believes SBE research provides an evidence-based understanding of human behavior, it recommends an increase over the fiscal year 2021 levels for SBE activities commensurate with its potential for impact.

The National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) is the country's oldest fellowship program that directly supports graduate students in various science, technology, engineering and mathematics fields. These fellows are anticipated to become knowledge experts who can contribute significantly to research, teaching, and innovations in science and engineering; they are crucial to maintaining and advancing the Nation's technological infrastructure and national security as well as contributing to the economic well-being of society at

large. Importantly, they enable the most promising candidates from groups historically underrepresented in science to choose science as a career.

Over the last several years, both GRFP program solicitations and the Administration's budget requests state that NSF is planning to reduce the number of awards to 1,600 down from the previous award level of 2,000 awards. It is only when Congress intervenes with directive report language in the CJS Appropriations reports that the awards are brought up to the steady level of 2,000 per year.

Given that many students are suffering disruptions or delays to their education resulting from COVID–19, NSF should be doing more to support the careers of student scientists. A cut in the number of GRFP awards sends an unintended message to those at early career levels that NSF's support is declining. APS urges the following report language be included in the fiscal year 2022 report supporting these important training grants.

> *Graduate Research Fellowship Program.*—The Committee notes that the Graduate Research Fellowship program (GRFP) has a long history of selecting recipients who achieve high levels of success in their future academic and professional careers and recognizes and supports outstanding graduate students in NSF supported sciences, engineering, and mathematics, including the field of behavioral science. In recognition of the outstanding contributions of this program to launch the careers of talented graduate students as they become lifelong leaders who contribute to scientific innovations and teaching, the Committee has provided the resources necessary to fund more than 3,000 grants in fiscal year 2022 and urges the program continue to grow in future years.

There is significant support in Congress and the Administration to expand the National Science Foundation with increases in funding as well as a new Technology and Innovation Directorate. APS appreciates the enthusiasm and attention to science and technology, and we wholeheartedly support efforts to grow scientific advancement. We request that Congress ensure that its efforts further strengthen NSF's unique mission of supporting fundamental research in all fields. We also encourage Congress to continue to support NSF's initiatives that ensure the U.S. science and technology workforce reflects the U.S. population, increase the number of leaders in science from historically underrepresented backgrounds, and support funding for and outreach to deserving colleges and universities that are not typical recipients of NSF support.

SUMMARY AND CONCLUSION

APS shares your commitment to fostering innovation and economic competitiveness through investing in our Nation's research infrastructure. While we request $10.2 billion for NSF, even more Federal funding for the agency could result in more research that can lead to new knowledge, new discoveries, and possibly products, services, and new industries. Additional SBE research will continue to help us understand patterns of stability and change at the individual, group, organizational, and societal levels that can be applied to promote the progress of science and to advance national health, prosperity, and welfare. Continued support for the Graduate Research Fellowship program at current levels, or even higher, provides training support for our future scientists and engineers.

We appreciate the opportunity to provide this testimony. and thank you for your leadership.

[This statement was submitted by Robert Gropp, Executive Director.]

PREPARED STATEMENT OF CAST

NATIONAL SCIENCE FOUNDATION

Chairwoman Shaheen, Ranking Member Moran and Members of the subcommittee, since 1984, CAST (originally the Center for Applied Special Technology) has worked relentlessly to ensure that our Nation is one where learning has no limits for all individuals. We pioneered *Universal Design for Learning (UDL),* a set of principles and guidelines for inclusive curriculum design that is now included in the Every Student Succeeds Act (ESSA), the Higher Education Opportunity Act (HEA), the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) and the National Education Technology Plan.

CAST is a non-profit organization that uses educational technology coupled with our expertise in the learning sciences to ensure all learners can and do reach their full potential. With grants provided by the National Science Foundation (NSF), U.S. Departments of Education (ED) and Labor (DOL) as well as the private sector, we

work to ensure the full power of UDL is utilized to harness technology and instructional practices to remove barriers to learning in digital as well as physical settings. UDL encourages the design of flexible learning environments that anticipate learner variability and provide alternative routes or paths to success; UDL acknowledges that variability across all learners is the *norm* rather than the exception. UDL provides both viable alternatives for *all* learners to access blended and online education and provides a responsive framework to support educators in their professional learning and application in any teaching environment. CAST's aim is to create a level playing field where all learners have equitable opportunities to succeed.

In fiscal year 2022, CAST requests: (1) National Science Foundation: receive a 20 percent overall increase. (2) National Science Foundation—Education and Human Resources: receive a 16 percent increase from $1.1B to $1.287B.

Since pioneering UDL more than 30 years ago, CAST has brought UDL into K–12 schools, into postsecondary settings and increasingly into career and technical education programs including STEM. Currently, through public-private partnerships, including funding provided by NSF, CAST is working to increase equity, diversity and inclusion of all students in STEM including English Learners, students with low literacy, and students with disabilities by: developing accessible STEM educational resources and making them more widely available to teachers and students; increasing engagement of [all] students, youth, adults in STEM education/STEM careers; and, ensuring STEM teachers have opportunities to be trained and receive a credential in the use of UDL.

Examples of successful initiatives led by CAST and funded and/or co-funded by NSF include:

STEMfolio: The *Career Exploration and Readiness Environment for Science, Technology, Engineering and Mathematics (CEE–STEM)* program is led by CAST with funding through NSF. CEE–STEM provides an e-portfolio called STEMfolio, which supports non-traditional high school students to collect information, reflect and record information regarding STEM careers of interest, chronicle their STEM learning in both classroom and job sites related to those careers, and take actions to connect with STEM postsecondary and employment opportunities. For educators, rubrics are provided so that teachers can evaluate students' understanding of various careers and the quality of materials in the student portfolio. STEMfolio is explicitly designed to increase diversity and inclusion in STEM, by helping marginalized students see the relevance and achievability of STEM career paths. By partnering with YouthBuild USA in the design and piloting of the tool, CAST has made sure that STEMFolio supports STEM learning and career pathways for young adults who are members of ethnic minority groups and who are economically disadvantaged, many of whom have dropped out of traditional high school paths and may also be justice-involved or be young parents.

UDL for Learning Science Notebook (SNUDLE): With NSF and ED funding, the SNUDLE project is designed to support elementary school students with learning disabilities in active science learning. Study results have shown the tool's support for science learning and the science inquiry process have statistically significant effects on students with disabilities science performance and their motivation for science learning.

Co-Organize Your Learning (CORGI): With NSF and ED funding, this project is designed to enhance student engagement and learning through a Google application (app) designed for students and teachers to use to collaboratively answer questions requiring higher order reasoning.

Multi-Gen STEM Makerspaces Project is a Makerspace initiative designed to increase access to STEM engagement, multi-disciplinary learning and opportunity by residents of low-income communities. Makerspaces have cropped up in schools, libraries, museums, and other settings, but low-income communities have not had the same access to these resources and their learning opportunities as have more affluent ones. CAST is changing that by working in partnership with an affordable housing complex in Stamford, CT. With NSF funding, we are co-designing makerspace guidelines, workshops and a Multi-Gen Makers Playbook that can be hosted and sustained in affordable housing complexes across the country to provide an engaging, accessible route to embed STEM learning in families' lives, allowing caregivers, children, young adults, and neighbors to gather and share their existing knowledge and skills, collaborate authentically and build on it, using STEM to meet personally relevant goals, to pursue a STEM career pathway, or to nurture a hobby or interest.

Advanced Technological Education: Making Community College Technician Education More Accessible for Everyone (AccessATE). Through support from NSF, the project goal is to support the ATE community and provide ATE grantees with the

tools and knowledge to increase the accessibility and usability of their resources and activities. CAST is providing technical assistance on accessibility and UDL to ATE Centers and recipients of ATE research grants. Partners include: Internet Scout, the Accessible Education Materials Center, DeafTEC, Human Engineering Research Laboratories and the National Center for Accessible Media. The AccessATE work specifically supports: Community college programs (e.g., Corrections, Manchester Community College, CT); and Marginalized rural youth (increasing access to work-based learning through outdoor recreation).

Advanced Regenerative Manufacturing Institute (ARMI). This public-private initiative to "secure U.S. global leadership in advanced manufacturing" brings CAST together with career and technical education schools, industry partners, and colleges to produce prototype career exploration modules that showcase the varied pathways into these new industries. The goal is to increase the number of students from under-represented populations and backgrounds pursuing careers in these nascent fields. Partners are: ARMI (industry and business), ATE community and career and technical education (CTE) via Federal Perkins funds.

As you can see, continuing to support NSF's education portfolio is essential, especially as the agency seeks to leverage the UDL framework. Funding for this work is critical to mitigating the current impact of digital, in-person or hybrid learning and, instead, achieving the inclusive potential of flexible learning environments *because the U.S. population of learners is predictably diverse.* Federal investments made by NSF to support teachers and other educators, as well as learners of all ages must plan for this diversity. To ensure equity, it is vital that all learners, including K–12 students, hard-to-engage youth, first-time career seekers, or adults desiring new opportunities, have access to STEM workforce development as well as career pathways and programs that are designed with the variability of their learning in mind. Continuing to invest in educational innovations that incorporate effective implementation of UDL while prioritizing the need to include UDL as part of the infrastructure of STEM education, including faculty training and expanding community and individual awareness creates equity and makes sense.

CAST appreciates the opportunity to provide recommendations to the subcommittee regarding the fiscal year 2022 appropriations bill and urges you to expand investments in the NSF as recommended. We look forward to working with you as you develop a final appropriations bill that supports the NSF and also recognizes UDL as a vital component to STEM education and career training to increase and sustain a vital workforce.

[This statement was submitted by Linda G. Gerstle, CEO.]

PREPARED STATEMENT OF THE COASTAL STATES ORGANIZATION, NATIONAL ESTUARINE RESEARCH RESERVE, NATIONAL MARINE SANCTUARY FOUNDATION, IOOS ASSOCIATION, AND SEA GRANT ASSOCIATION

SUPPORT FOR FISCAL YEAR 2022 APPROPRIATIONS TO PROMOTE CLIMATE RESILIENCE AND ADAPTATION FOR THE NATION'S OCEANS, COASTS, AND GREAT LAKES

This joint statement is submitted on behalf of the non-profit organizations listed above who share a deep concern for the health of the Nation's oceans, coasts, and Great Lakes. The members of our organizations work as partners to assist our coastal communities enhance their resilience by leveraging each other's contributions and strengths in an effort to ensure we maximize the use of our resources towards synergistic outcomes i.e., "a whole that is greater than the sum of the parts."

America's coasts are highly desirable places to live, with growing populations, however, at this interface between land and water, coastal dynamics are constantly in flux, bringing a unique set of challenges:

—*COVID–19.* The global COVID–19 pandemic has highlighted and compounded economic and social challenges at many levels, particularly for disadvantaged communities.

—*Climate Change.* Coastal residents are increasingly threatened by hurricanes, fires, flooding, typhoons and tsunamis, as well as chronic challenges, including coastal inundation (due to rising sea levels and land subsidence), erosion, and increasing storm intensity.

—*Racial Equity.* Historically underserved and underrepresented communities, particularly Black, Indigenous and people of color, are disproportionately impacted by weather, climate, and disease impacts.

—*Economic Recovery.* Loss of jobs and market-related impacts have been acutely felt in coastal communities.

Coastal resilience is a complex and continuously evolving issue and effectively addressing it requires a collaborative framework of Federal, State, and local partners. NOAA's partner programs—Coastal Zone Management, Sea Grant, National Estuarine Research Reserves, National Marine Sanctuaries and the Integrated Ocean Observing System—work together to provide tailored information, planning resources, protected land and water areas, science and science translation that provide a comprehensive and integrated set of services to address national priorities effectively at the local, State and regional level. Depending on geography and the specific challenge, each of these partners provides a critical tool in the toolbox needed to support communities in addressing coastal resilience and climate adaptation:

—Innovative science is necessary to develop new coastal resource management, protection, and restoration techniques.
—Sustained observations and accurate data collection are necessary to inform innovated science.
—Modeling and visualization tools are necessary to translate data into meaningful information to inform coastal decision-making.
—Coastal zone management policies informed by data and science are necessary to ensure wise management of the coasts.
—Policies to enforce wise coastal management, resilience planning, implementation of coastal restoration and resilient infrastructure projects, and timely and robust coastal hazard response are necessary to translate data and science into effective coastal management
—Education and communication resources for best practices and risk communication are necessary to ensure that the public has reliable and actionable information regarding coastal hazards.
—Conservation, protection, and stewardship of coastal places is necessary to provide coastal protections from coastal hazards and to study sentinel-sites to inform coastal adaption and hazard mitigation efforts.

If any of these tools is missing, or Federal investments do not adequately support each of these tools, efforts to address coastal climate resilience and adaptation will be hampered and less effective. The immense challenges facing our coastal communities and ecosystems are much too large for any one organization to be able to solve alone. Thriving and collaborative partnerships are essential to supporting the vision of safe and sustainable coasts. Each of the partners here play a critical role in advancing coastal resilience and adaptation and actively work collaboratively to advance these goals.

Over 126 million residents—40 percent of the population of the United States—live in coastal counties occupying only 10 percent of the U.S. landmass. These counties employ 56 million people, resulting in $3.4 trillion in wages annually, and produce more than $8.3 trillion in goods and services. Weather- and climate-related hazards, and the resulting loss of life as well as environmental and economic impacts, have increased at an alarming rate. Since 1980, the Nation experienced 285 weather and climate disasters where overall damages reached or exceeded $1 billion. The cost of these 285 events exceeds $1.875 trillion. Just in the last 5 years (2016–2020), the Nation was subjected to 81 events that resulted in nearly 4,000 deaths and damages that exceed $600 billion.

These weather and climate coastal hazards threaten critical coastal infrastructure, water and food supplies, and lives and livelihoods. These hazards can create both governance challenges and social instability and have a disproportionate impact on under resourced communities and communities of color. The increasing physical and economic damages, social justice implications, and community devastation is testing governments at all levels, and have shown that more is needed to ensure that our coastal communities are prepared for, have taken mitigation measures to reduce the impact of, and are able to respond to and recover from major episodic and chronic weather and climate threats. To ensure coastal communities are prepared to address increasing coastal hazards, a robust investment in a networked resilience initiative is necessary.

Sea Level Rise in New Hampshire.—New Hampshire Seacoast communities experience increasingly frequent and severe storm impacts. This can lead to devastating flooding, as seen in three back-to-back Nor'easters in 2018 that knocked out power to millions in New England, drove erosion that carved up the coast, and floated dumpsters down main streets in Hampton, NH. University of New Hampshire researchers with support from New Hampshire Sea Grant in partnership with staff at the New Hampshire Department of Environmental Service (NHDES)'s Coastal Program spearheaded the Coastal Landowner Technical Assistance Program (LTAP)—to guide residents through assessing and mitigating flooding and erosion risk on their properties. Since launching in 2019, LTAP has helped over 70 partici-

pants at 25 flood- and/or erosion-prone sites. LTAP provides consistent technical assistance to coastal landowners to help understand their potential coastal flood risks and restoration opportunities, clarify goals for managing their property, and identify conceptual options that may enhance the resilience of their properties, neighborhoods, and community's natural resources.

South Carolina, Delaware, North Carolina, Florida, and Georgia—Using Data to Prepare for Hurricanes and Severe Storm Impacts.—Downed power lines, flooding, damaged buildings—some hurricane impacts are easy to spot. Others, like changes in water salinity that impact local fisheries, are harder to assess. Not knowing where such changes occur, or how long they linger, is a perennial challenge for coastal decision makers. To meet this need, the National Estuarine Research Reserve System-Wide Monitoring Program (NERRS SWMP) and the Integrated Ocean Observing System (IOOS) along the East Coast partnered to track salinity changes that resulted from Hurricanes Joaquin in 2015 and Matthew in 2016. Both networks collect data that can be used to track storm signals: NERRS data typically comes from nearshore and upstream areas, and IOOS data is collected further offshore. By putting these datasets together, you can paint a picture of a hurricane and its impacts in near real-time as a storm moves along the coast and into the watershed. The team found that, depending on the location, the changes in salinity persisted for a week to more than a month after the storm had passed. Using visualizations and data mapping, they showed the magnitude and duration of these changes—powerful information for managers of fisheries that are sensitive to salinity. By forming an extended network of monitoring stations collecting data over large geographic areas, NERRS and IOOS have the potential to accelerate understanding of the science around a range of storm impacts and their drivers.

Hawaiian Indigenous Seafoods, COVID, and Marine Conservation.—Food, land, and people are closely interwoven in the mission of Hawai'i's He'eia National Estuarine Research Reserve. In 2020, the Reserve, Hawai'i Sea Grant Program, Paepae o He'eia and Kāko'o 'Ōiwi tied these threads together to help food service workers hit hard by the COVID–19 pandemic with a professional development experience based on Indigenous seafood. Revitalizing Indigenous food systems and associated food culture is a central component of coastal and marine conservation in the Hawaiian Islands. In this 7-week training, participants explored the history, ecology, cultural practices, cultivation, and harvesting techniques of Indigenous seafoods and learned how to prepare and preserve them. The food service industry was one of the hardest hit in Hawai?i during the pandemic, with a 58 percent loss of full-time employees between January and April 2020. In addition to professional development, training organizers worked to support employee retention, increase public understanding of local foods, and strengthen partnerships between Indigenous seafood practitioners and local restaurants. By providing a stipend to participants, the program also was a short-term source of income to workers facing unemployment or underemployment due to the pandemic. Participants have become informal educators, able to introduce and explain native foods and their preparation techniques to the public.

Collaboration Enhances Hazard Resilience in Washington.—The Washington Coastal Zone Management Program (CZM), Washington Sea Grant (WSG), and the Padilla Bay National Estuarine Research Reserve (NERR) are longstanding partners in addressing Federal hazard resilience objectives along the State's 3,000-mile marine coastline by applying scientific and technical innovations to coastal management policy and community assistance programs. The team worked with science partners and pilot communities to produce localized sea level rise projections that are relevant to existing planning and funding processes. The project relied on Washington Sea Grant expertise to rapidly improve the scientific information and tools to evaluate risk, CZM planning and design guidance to support local adaptation strategies and NERR leadership to develop a new climate resilience series in the State's Coastal Training Program. A redesigned website for the Washington Coastal Hazards Resilience Network provides improved access to related technical information and case histories. The net effect has been greater collective capacity in Washington to support local initiatives.

Building Alaskan Community Resilience to Harmful Algal Blooms.—The economic, environmental and health impact of harmful algal blooms (HABS) is increasing around the country as new species emerge and existing problems grow worse. For example, in Alaska the State saw its first paralytic shellfish poisoning fatality in more than a decade last year. The impacts of HABs on shellfish threaten public health and Alaska's economy, which includes an estimated $12.8 billion in economic output related to the annual commercial and wild shellfish harvest each year. In response to this growing threat, the Alaska Ocean Observing System supported detection and early warning of harmful algal blooms through the deployment of sen-

sors, development of forecasts and data integration and management. The Kachemak Bay National Estuarine Research Reserve initiated an ongoing HABs community monitoring program that is helping citizens, businesses, and the State—which lacks a shellfish monitoring program—respond to the challenge. Working together—the Reserve joined the Alaska Sea Grant Program and the Alaska Ocean Observing System to form the statewide Alaska Harmful Algal Bloom Network. This collaboration is helping to understand and track HABs and their impacts on a harvest that yields 36 million pounds of wild food annually. These programs work with local shellfish growers, Tribes, and resource managers to support phytoplankton monitoring, shellfish sampling, workshops, risk communication training, public service announcements, and weekly monitoring reports.

Oregon Shoreline Armoring.—Oregon Sea Grant (OSG) and the Oregon Coastal Zone Program within the Oregon Department of Land Conservation and Development (DLCD) was tasked with addressing shoreline armoring (the practice of using physical structures to protect shorelines from coastal erosion) in Goal 18 of Oregon's statewide land use planning goals on conserving and protecting Oregon's beaches and dunes, and on reducing hazards to human life and property. A diverse focus group, including a program manager from the Oregon Department of Transportation, a director of a public utility, a county planner, a city manager, an engineering geologist, an economist and a land use attorney, was asked to address key topics related to shoreline armoring. Permits for armoring are limited to areas of development prior to 1977, when goal 18 was implemented. The topic is controversial, with OSG playing a neutral role. The group ultimately produced a consensus report that is used by DLCD in its management of the Oregon coast.

In conclusion, we urge the subcommittee to strongly support programs and initiatives in the fiscal year 2022 budget for NOAA) that collectively help strengthen our coastal communities' resilience specifically:

$107.9 million in fiscal year 2022 for the National Sea Grant College Program and $15 million for Sea Grant Aquaculture..	$40 million for National Oceans and Coastal Security Fund
$36.8 million for the Integrated Ocean Observing Program ...	$88.5 million for Coastal Management Grants and $50.45 million for Coastal Zone Mgt and Services
$32 million for National Estuarine Research Reserve System operations and $10 million for procurement, acquisition & construction.	$35 million for NOAA Education programs
$72 million for National Marine Sanctuaries operations and $8.5 million for procurement, acquisition & construction.	$6 million for the Digital Coast Program

Ocean, coastal, and Great Lakes research, education, conservation, and resource management programs funded by this subcommittee are investments in the future health, resiliency, and well-being of our coastal communities which will result in returns of improved quality of life, as well as environmental and economic outcomes many times over the Federal investment. Thank you for the opportunity to provide this joint statement.

Prepared Statement of the Columbia River Inter-Tribal Fish Commission

The Columbia River Inter-Tribal Fish Commission (CRITFC) is pleased to share our views on the Department of Commerce's fiscal Year 2022 budget and has identified the following funding needs:

$109.0 million for Salmon Management Activities of which:

—$26.5 million for Mitchell Act Programs to support on-going operation and maintenance of the program and produce the targeted fish mitigation numbers; and

—$43.5 million for the Pacific Salmon Treaty in annual operations for the implementation of the 2019–2028 Agreement.

$70 million for the Pacific Coastal Salmon Recovery Fund to support on-the-ground salmon restoration activities.

$4 million for Columbia River Pinniped Management to support implementation of the MMPA Section 120(f) permit issued by NOAA–F in 2019

$80.8 million for Integrated Ocean Observing System (IOOS) in NOAA National Ocean Service budget

—$69.5 million supports IOOS Regional Associations, including the NANOOS (Northwest Associations of Network Ocean Observing Systems) regional association, which serves Oregon and Washington.

—$11.3 million supports IOOS National program in the Navigation, Observation and Positioning budget line.

Background: The Columbia River Inter-Tribal Fish Commission (CRITFC) was founded in 1977 by the four Columbia River treaty Tribes: Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe. CRITFC provides coordination and technical assistance to the Tribes in regional, national and international efforts to protect and restore fisheries and fish habitat.

In 1855, the United States entered into treaties with the four Tribes.[1] The Tribes ceded tens of millions of acres of our homelands to the U.S. and the U.S. pledged to honor our ancestral rights, including the right to fish at all usual and accustomed places. Unfortunately, a long history of hydroelectric development, habitat destruction, and over-fishing by non-Indians brought the salmon resource to the edge of extinction with 12 salmon and steelhead trout populations in the Columbia River basin listed under the Endangered Species Act (ESA).

Today, the treaties form the bedrock of fisheries management. The CRITFC Tribes are among the most successful fishery managers in the country, leading restoration efforts and working with State, Federal, and private entities. CRITFC's comprehensive plan, *Wy-Kan-Ush-Mi Wa-Kish-Wit,* outlines principles and objectives designed to halt the decline of salmon, lamprey, and sturgeon populations and rebuild the fisheries to levels that support Tribal ceremonial, subsistence, and commercial harvests. To achieve these objectives, the plan emphasizes strategies that rely on natural production, healthy rivers, and collaborative efforts.

Several key regional agreements were completed in 2008. The Columbia Basin Fish Accords set out parameters for management of the Federal Columbia River Power System for fish passage. New agreements in *U.S. v. Oregon* and the Pacific Salmon Commission established fishery management criteria for fisheries ranging from the Columbia River to Southeast Alaska. The *U.S. v. Oregon* agreement also contains provisions for hatchery management in the Columbia River basin. We have successfully secured other funds to support our efforts to implement these agreements, including funds from the Bonneville Power Administration (BPA), the Department of Interior, and the Southern Fund of the Pacific Salmon Treaty, to name just a few. Continued Federal funding support is needed to accomplish the management objectives embodied in the agreements.

Salmon Management Activities

Columbia River (Mitchell Act) Hatchery Program: We request the Mitchell Act be funded at $26.5 million for fiscal Year 2022. The Mitchell Act enables Federal agencies to work with the Lower Columbia River treaty Tribes and the States of Oregon, Washington, and Idaho to establish and operate a series of hatcheries and passage facilities to improve declining fish runs in the Columbia River, ensure conservation of these critical natural resources, maintain economically viable Tribal, commercial, and sports fisheries and provide prey for Southern Resident killer whales. Today, the Mitchell Act funds 60 programs that produce approximately 40 million fish annually—nearly 30 percent of the total salmon and steelhead production in the Columbia Basin.

The request for an additional $4.5 million in Mitchell act funds above the fiscal Year 2021 funding level ($22 million) is to ensure that mitigation hatcheries maintain levels of production and meet new operating requirements consistent with Federal obligations. There is an obligation to treaty Tribes and other stakeholders for mitigation and in order to reach mitigation responsibilities, there must be full hatchery production.

Pacific Salmon Treaty Program: CRITFC supports the U.S. Section recommendation of $43.5 million for implementation of the revised Pacific Salmon Treaty (Treaty).

The Department of Commerce principally funds programs conducted by the States of Washington, Oregon, Idaho, and Alaska and the NMFS. However, the cost of pro-

[1] Treaty with the Yakama Tribe, June 6, 1855, 12 Stat. 951; Treaty with the Tribes of Middle Oregon, June 25, 1855, 12 Stat. 963; Treaty with the Umatilla Tribe, June 9, 1855, 12 Stat. 945; Treaty with the Nez Perce Tribe, June 11, 1855, 12 Stat. 9.

grams conducted by these States to fulfill national commitments created by the Treaty continue to be substantially greater than the funding provided in the NMFS budget. Consequently, they have supplemented the Federal Treaty appropriations from other sources, including their general funds. Many of those funding sources are limited or no longer available and this has been exacerbated by the ongoing global pandemic.

The $20 million increase in the fiscal Year 2020 budget and the $5 million in the fiscal year 2021 budget were greatly appreciated, however it falls short of what the U.S. Section estimates is needed to fully implement the revised Annex Chapters to the Pacific Salmon Treaty.

Pacific Coastal Salmon Recovery Program (PCSRF): The PCSRF program was developed in 2000 by the State of Alaska, the Pacific Northwest States, and the treaty Tribes since the renewal of the Pacific Salmon Treaty in 1995 to fulfill the unmet needs for the conservation and restoration of salmon stocks shared in the Tribal, State, and international fisheries. Since that time, the number of entities eligible for receiving funding has grown.

PCSRF has funded 401 Yakama, Umatilla, Warm Springs, Nez Perce, and CRITFC Tribal salmon recovery projects. These projects have contributed greatly to the PNW effort to avoid extinction of Columbia Basin salmon species and their habitat. Accomplishments include 4,581 stream miles monitored; 413 miles of stream made accessible to salmon; 4,971 acres of riparian area treated; 11,341 acres conserved by acquisition or lease; and 2 million salmon fry/smolts released annually. PCSRF is vital to fulfill the region's goal of full salmon recovery and sustainability of the fishery and provide for meaningful exercise of the treaty-reserved rights of the lower Columbia River treaty Tribes.

The co-managers have developed an extensive matrix of performance standards to address accountability and performance standards, which includes the use of monitoring protocols to systematically track current and future projects basin-wide. The PCSRF projects implemented are based on the best science, adequately monitored, and address the limiting factors affecting salmon restoration. Projects undertaken by the Tribes are consistent with CRITFC's salmon restoration plan and the programmatic areas identified by Congress.

We recommend a funding level of $70 million for the PCSRF fiscal Year 2022 allocation. Long-term economic benefits can be achieved by making PCSRF investments on-the- ground to rebuild sustainable, harvestable salmon populations into the future.

Columbia River Section 120 (f) Pinniped Removal Program: Since 2002, sea lions in the Columbia River have significantly impacted endangered and threatened stocks of salmon and steelhead. Sea lions also prey on Pacific lamprey and mature sturgeon below Bonneville Dam, and on listed salmon and steelhead runs in the Willamette River and other tributaries to the Columbia River. Thirty-two wild salmon populations bound for the upper Columbia and Snake rivers are vulnerable to predation by sea lions immediately below Bonneville Dam. Other ESA-listed salmon and steelhead populations passing through the lower Columbia River when sea lions are feeding include lower Columbia River chinook, lower Columbia River steelhead, middle Columbia River steelhead, Snake River basin steelhead, upper Willamette River chinook, and upper Willamette River steelhead. All six of these are listed as "threatened" under the ESA.

Despite non-lethal and limited lethal-take measures, the number of salmon and steelhead consumed by sea lions below Bonneville Dam more than doubled between 2006 and 2015, as larger Steller sea lions increased in numbers and began to take a higher toll; management and Federal authorization was initially focused on California sea lions and not Steller sea lions. In response, Congress amended the Marine Mammal Protection Act (MMPA) in December 2018 to provide State and Tribal resource managers greater flexibility to manage sea lions. In August, 2020, the Yakama, Nez Perce, Umatilla, and Warm Springs along with Oregon, Washington, and Idaho, received a MMPA Section 120(f) permit from the National Marine Fisheries Service to actively manage pinniped populations in the lower Columbia River and its tributaries. The authority under this permit increases the scope and scale from earlier management efforts and expands lethal removal authority to also include Steller sea lions. This permit expands the area of potential removals and will increase removal activity from 3 months per year to 10 or more months per year. Previously, removing sea lions required a multistep process which included branding the animals and identifying repeat offenders. This new authority will streamline that process and, as a result, will increase the number of trappings and removals. In order to fully implement the Section 120(f) permit, the States and Tribes are requesting $4 million in Federal funds. This will supplement current State and Tribal contributions.

Regional and National Integrated Ocean Observing System (IOOS) in NOAA National Ocean Service budget: CRITFC supports the Commerce Department's recommendation of $69.5 million for IOOS Regional Associations, and $11.3 million in the Navigation, Observations and Positioning line for IOOS national program efforts.

The Commerce Department's budget justification requests increased funding for the National IOOS office to create and foster natural and economic resilience, including the creation of a Marine Life Program in IOOS, and to improve data management and cyberinfrastructure (DMAC) to enhance Regional IOOS expertise for stakeholder engagement and co-development of IOOS decision support products and services.

IOOS is the Nation's premier coastal and Great Lakes observing program, providing information that helps protect lives, economies, and our environment. Fully funding IOOS consistent with the Commerce Department's budget request will maintain and improve critical program management and system development. Prior years' funding levels for IOOS have been insufficient to fully fund the identified regional needs for observation and modeling that are essential for understanding threats to Columbia River salmon in the estuary and ocean.

In 2020, CRITFC assumed responsibility for the Coastal Margin Observation and Prediction (CMOP) program, a modeling and observation system covering the Columbia River estuary and coastal ocean. CMOP is funded as a component of NANOOS (Northwest Ocean Observing System, the Regional Association serving Oregon and Washington. As a Regional Association, NANOOS works with local experts, scientists, managers, industry, and stakeholders within the community to understand needs, identify priorities, and determine cost-effective solutions. NANOOS is committed to addressing national priorities in a manner that is tailored to the unique needs of our region and that will make a difference to stakeholders and constituents.

In summary, the CRITFC and our four member Tribes have developed the capacity and infrastructure to become the regional leaders in restoring and rebuilding salmon populations of the Columbia Basin. Our collective efforts protect our treaty-reserved fishing rights and provides healthy, harvestable salmon populations for all citizens to enjoy. We will be pleased to provide any additional information that this subcommittee may require.

Contact: Paul Ward, Director of Government Affairs, warp@critfc.org.

[This statement was submitted by Jeremy Takala, Chairman.]

PREPARED STATEMENT OF THE CONSORTIUM FOR OCEAN LEADERSHIP

On behalf of the Consortium for Ocean Leadership (COL), which represents our Nation's leading ocean science, research, and technology organizations from academia, industry, and the larger nonprofit sector, I appreciate the opportunity to submit for the record our fiscal year 2022 funding priorities for the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA).

The last year brought unprecedented challenges to our Nation and our world, challenges whose impacts we will be feeling for years to come. As our Nation moves from relief to recovery to resilience, it is critically important the Federal Government continue to invest in sciences outside the medical realm, increasing support for our ocean science agencies and programs. As the world's leading maritime nation, the success of our National economy is deeply tied to that of the maritime, or "blue" economy, and a resilient national recovery must include a significant revitalization of the blue economy. The blue economy has weathered previous recessions better than the overall economy; by 2016, employment had increased by 14.5 percent compared to pre-recession levels (2007), dwarfing the 4.8 percent employment growth of the National economy. Projections also show the growth of the blue economy is likely to outpace that of the global economy. While a strong pillar of our economy, the blue economy is not exempt from the negative impacts of COVID, and it's clear that its revitalization will be critical to ensuring our post-COVID economic prosperity.

Investing in ocean science and technology, in addition to growing the blue economy, will allow us to understand our changing ocean and climate, enable science-based decision making on topics ranging from resource management to offshore wind, protect our coastal communities, enable resilience, and strengthen our National security. NOAA, NSF, and NASA each play important roles in understanding our Earth system—including the ocean, in educating our Nation's citizens to create a more environmental- and ocean-literate society; in growing a diverse and equitable

Federal workforce; and much more. Additionally, these agencies are already heavily invested in climate research, and it is necessary to support and grow these existing programs, as well as the opportunity to grow coordination and collaboration across related issue areas.

I appreciate and support the administration's widespread increases to ocean agencies and programs in the president's budget request. However, I was disappointed in the flat funding ($3 million) proposed for the National Oceanographic Partnership Program (NOPP). Given the current energy surrounding the program, due in part to its reauthorization in fiscal year 2021, and the increasingly important role of cross-sectoral partnerships, a more robust investment would ensure the rapid and flexible creation of multisector partnerships to solve complex ocean problems and to advance the economic, environmental, and national security interests of the United States. Increased investment would also signal to non-Federal partners the government's acknowledgement of the importance of their role and the potential for partnerships to advance our ocean enterprise. To fully utilize NOPP and facilitate the success of projects promoting national goals related to ocean knowledge, I respectfully request the subcommittee provide at least $20 million in NOPP funding—$10 million to NOAA and $10 million to NASA, and I also encourage strong support of the program through NSF. Of the $10 million to NOAA, *at least* $1 million should be directed to the Ocean Research Advisory Panel (ORAP), NOPP's statutory *Federal Advisory Committee Act* body, as NOAA is now statutorily required through the fiscal year 2021 reauthorization to provide administrative and technical support.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

I respectfully request at least $7.2 billion for NOAA (3 percent more than the request).

To make the best, proactive management decisions possible, it is necessary that we first understand our ocean. So much of our ocean remains unknown-more than 80 percent is unexplored, unmapped, or unobserved. We must grow our Nation's ability to both observe and to explore the ocean. I respectfully request *at least:*

—$100 million for the Office of Ocean Exploration and Research (130 percent more than the request), the only Federal organization dedicated to ocean exploration. Due to the cooperative nature of the enterprise, I also request report language addressing the importance of collaboration and coordination among Federal and State agencies, academic institutions, industry, Indigenous communities, philanthropy and other oceanographic partners to maximize return on investment and advance shared data, science and public engagement, and innovative technology.

—$69.5 million for the U.S Integrated Ocean Observing System (IOOS) regional system (equal to the request), which includes *at least* $40.2 million for the National network of regional coastal observing systems; $2.5 million to install high-frequency radar systems to close gaps in the surface current mapping system, $3.5 million to support underwater gliders; $2.5 million to streamline observations, coastal resiliency, and coastal climate observations; $3.5 million to expand pilot projects for a National Harmful Algal Bloom Observing Network; and $4.3 million for ocean technology and modeling innovation. Additionally, I request *at least* $7.3 million for the Program Office. I also support language in the request around the establishment of a Marine Life Program and the $15 million in external grant funding to expand marine life observations (which should include activities around eDNA and 'omics), support analysis, and forecast implications of climate change. Finally, I support authorizing language around maintaining and expanding the Ocean Noise Reference Station Network (in coordination with IOOS) and request $1.5 million for this work.

—$66.8 million for the Sustained Ocean Observations and Monitoring Program (SOOM) (equal to the request) to maintain observations to better understand and respond to changing ocean conditions. SOOM, whose funding has remained essentially flat since fiscal year 2005, funds an array of monitoring capabilities necessary to understand the long-term impacts of the changing climate; to enhance hurricane forecasting, tsunami warning systems, and storm surge monitoring; to improve weather forecasting; to assess and plan for environmental variability and change; and to sustainably manage marine ecosystems.

—$10 million for Uncrewed Systems (150 percent more than the request) within the Office of Oceanic and Atmospheric Research to advance research and evalution for operational readiness, including testing and evaluation in partnership with academia, industry, and other non-governmental organizations in support of the *CENOTE Act of 2018 (Public Law 115–394).* I respectfully request

at least half the funding be for uncrewed maritime systems and that, to the extent practicable, funds be competitively awarded in open competition.

NOPP is not the only partnership program that brings great benefit to the ocean science community. Many programs at NOAA advance cooperation and coordination between Federal and non-Federal partners and provide extramural funding opportunities. I respectfully request *at least:*

—$42 million for the National Centers for Coastal Ocean Science Competitive Research Program (NCCOS CRP) (equal to the request), which has supported coastal and Great Lakes States and U.S. territories with groundbreaking and innovative research over the last 30 years. The $68.5 million has funded 113 projects around a variety of topics, including harmful algal blooms (HABs), hypoxia, coastal change, and regional ecosystems. However, the program has received many more proposals than it has funded, with more than $441 million requested. Continuing to grow this account is necessary to support the increasing demand for these funds to address HABs and hypoxia challenges.

—$115.7 million for the National Sea Grant College Program (Sea Grant) (equal to the request) and $15 million for Sea Grant (Marine) Aquaculture (15 percent above the request). For decades, Sea Grant has supported coastal and Great Lakes communities, improving community and economic resiliency, ensuring healthy coastal ecosystems, and advancing environmental literacy and workforce education.

The importance of STEM education and extensions programs cannot be overstated. Expanding and growing our ocean-STEM pipeline to reach underserved and underrepresented communities is an imperative, as the ocean sciences severely lack diversity. This will also benefit the ocean-STEM pipeline and associated workforce, whose stability and diversity are at risk due to the COVID–19 pandemic and lingering inequities. I respectfully request *at least:*

—$50 million for NOAA's Office of Education (22 percent more than the request), including a $20 million increase for NOAA's Bay-Watershed Education and Training and Environmental Literacy Program grants (ELP). Sustained and adequate funding for these programs advances NOAA's mission, grows the STEM workforce, and strengthens our economy. As the longest-standing and most comprehensive national grants program with a focus on environmental literacy, ELP grants have and will continue to keep our coastal communities—and our Nation as a whole—safe, secure, and prosperous.

NATIONAL SCIENCE FOUNDATION

I respectfully request at least $10.2 billion for the agency (equal to the request).

I thank the subcommittee for providing $127 million in fiscal year 2019 to finish out the 3-year funding profile to complete construction of all three Regional Class Research Vessels (RCRVs). With more modern technology and abilities than previous generations, these long-awaited RCRVs will provide even more access to the marine realm, and I respectfully request the subcommittee maintain full operational and maintenance support for these critical research vessels, including funding needs related to COVID–19 delays and impacts. I appreciate the committee's efforts to bring the RCRVs online and believe now is the time to initiate conversations focused on ensuring continued access to Global Class Research Vessels in the future.

NSF's Directorate for Geosciences (GEO) supports basic research from the ocean to the poles to the atmosphere. GEO is only growing in relevance to NSF's mission, particularly as we gain a better understanding of the impacts of a changing climate on everything from the ocean and human health to its role as an essential element of our National security. This research will help our Nation meet the challenges of today, particularly around the changing climate, from understanding, adapting to, and mitigating the impacts of change to predicting environmental hazards and extreme events. I respectfully urge strong support for GEO to help us understand our global environment.

STEM education at NSF plays a vital role in securing our National, homeland, economic, energy, food, and water securities. Broadening the backgrounds of scientists to represent all people across our Nation, better reflecting our diversity of gender, race, class, and perspective, is critical for all STEM fields. A diverse, STEM-literate workforce strengthens our Nation's economy and is vital to maintaining the Nation's leadership in science and technology innovation. It is imperative to reinforce the importance of funding Federal programs that empower underrepresented groups to become the next generation of ocean-STEM leaders at every educational and technical level. The NSF INCLUDES (Inclusion across the Nation of Commu-

nities and Learners of Underrepresented Discoverers in Engineering and Science) program aims to increase access to and participation in STEM learning by demographic groups with historically low participation in these fields. Programs such as this—that support a more diversified academic core in the science and technology workforce—are key to ensuring the inclusion of underrepresented groups and in growing our blue economy, and I respectfully urge strong support for NSF INCLUDES.

U.S. investment in scientific ocean drilling over the past 55 years has been vital to the health and sustainability of our Nation and our planet. Scientific ocean drilling has been and will continue to be a foundational platform to make advances of acute societal relevance and resilience. For example, it has allowed us to grow our understanding of past climate change and sea level rise and is critical to our understanding of future climate risk and the assessment of possible adaptation and remediation scenarios. Additionally, it has been and will continue to provide the critical insights and state-of-the-art monitoring data that will enable more reliable forecasts and assessments related to understanding the tectonic processes that result in mega-earthquakes and tsunami, which cause some of our planet's deadliest and most costly natural disasters, impacting highly vulnerable communities. Scientific ocean drilling also provides an opportunity to grow our STEM leadership and to diversify our workforce and represents one of this Nation's most successful, productive, and impactful investments advancing national STEM education and basic research. Maintaining U.S. leadership in scientific ocean drilling—through beginning to take actions necessary to build and support operations of a new drill ship to carry the International Ocean Discovery Program beyond the 2024 horizon that it is scheduled to end—is of the utmost importance.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Understanding our home planet is central to NASA's mandate, and space provides a unique perspective from which to understand Earth on a planetary scale. To grow our understanding of Earth—and to better prioritize understanding the changing climate—I respectfully request *at least* $9 billion for the Science Mission Directorate (14 percent more than the request) and *at least* $2.5 billion for NASA Earth Science (9 percent more than the request). This should include support for the agency's Earth-facing missions, specifically the Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission and the Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder instrument. Both were recommendations from the 2007 Earth Science decadal survey.

Education programs bringing students into the STEM pipeline are critically important and need to increase their outreach to attract and retain underserved and underrepresented students in STEM fields. I request *at least* $147 million for the Office of STEM Engagement (equal to the request).

By maintaining and growing these funding levels across all three agencies, the committee would also be supporting our Nation's leadership on recently announced U.S.-led initiatives that are part of the UN Decade of Ocean Science for Sustainable Development.

[This statement was submitted by Dr. Alan P Leonardi, President and CEO.]

PREPARED STATEMENT OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

SUPPORT OF FISCAL YEAR 2022 FUNDING FOR THE NATIONAL SCIENCE FOUNDATION, CENSUS BUREAU, NATIONAL INSTITUTE OF JUSTICE, AND BUREAU OF JUSTICE STATISTICS

On behalf of the Consortium of Social Science Associations (COSSA), I offer this written testimony for inclusion in the official committee record. For fiscal year 2022, COSSA urges the Committee to appropriate:

—$10.2 billion for the National Science Foundation
—$2 billion for the Census Bureau
—$42 million for the National Institute of Justice
—$50 million for the Bureau of Justice Statistics

First, allow me to thank the Committee for its long-standing, bipartisan support for scientific research. Strong, sustained funding for all U.S. science agencies is essential if we are to make progress toward improving the health and economic competitiveness of the Nation. The need for increased investment in science has become even more pronounced in light of the disruptions caused over the past year by the COVID–19 pandemic.

COSSA serves as a united voice for a broad, diverse network of organizations, institutions, communities, and stakeholders who care about a successful and vibrant social and behavioral science research enterprise. We represent the collective interests of all STEM disciplines engaged in the rigorous study of why and how humans behave as they do as individuals, groups and within institutions, organizations, and society.

Social and behavioral science research is supported across the Federal Government, including at the National Science Foundation and the Department of Justice. Further, Federal statistics produced by the Census Bureau and other Federal statistical agencies provide data needed to conduct social science research to inform policy decisions. Taken together, Federal social and behavioral science and statistical data help provide answers to complex, human-centered questions.

In short, knowledge derived from social and behavioral science research has made our population healthier, our democracy fairer, our Nation safer, and our economy stronger, and not just in times of crisis. Without these sciences, policymaking on major national and global issues would not be based on evidence, and billions of dollars would be wasted.

NATIONAL SCIENCE FOUNDATION

COSSA joins the broader scientific community in support of $10.2 billion for the National Science Foundation (NSF) in fiscal year 2022. The U.S. scientific enterprise, including NSF, requires stability, predictability, and sustainable funding growth, as well as Federal policies that are patient and can tolerate a reasonable amount of risk in order to achieve the greatest payoff.

Supporting All of STEM

NSF is the only U.S. Federal agency tasked with supporting basic research across all fields of science. NSF supports about a quarter of all federally funded basic scientific research conducted at colleges and universities nationwide and serves as the largest single funder of university-based basic social and behavioral science research. Though NSF's Social, Behavioral, and Economic Sciences Directorate (SBE)—one of seven research directorates at NSF—represents less than five percent of the entire NSF research budget, it supports around two-thirds of total Federal funding for academic basic research in the social and behavioral sciences (excluding psychology). As the primary funding source for the majority of our disciplines, stagnant or reduced funding for SBE has an outsized impact on the social and behavioral science community. As increased investment is made in NSF, we are hopeful the social, behavioral and economic sciences will see commensurate investments.

Further, while by far the smallest of the research directorates, SBE's impact is huge. The National Academies of Sciences, Engineering and Medicine stated in its 2017 consensus report, *The Value of Social, Behavioral, and Economic Sciences to National Priorities*,[1] that "nearly every major challenge the United States faces-from alleviating unemployment to protecting itself from terrorism-requires understanding the causes and consequences of people's behavior. Even societal challenges that at first glance appear to be issues only of medicine or engineering or computer science have social and behavioral components."

Keeping NSF Competitive

Authorizing proposals for NSF have surfaced in the last year, particularly proposals to create new directorates at the agency focusing on technology transfer and convergence research. The bills would authorize significant funding increases to achieve their goals, which is greatly appreciated and needed. COSSA hopes that any effort to embolden NSF to continue exploring the frontiers of science will be met with a commitment to maintaining the agency's defining characteristic, which is to be the incubator for basic scientific discovery across all areas of science. NSF's investigator-initiated, discovery-driven identity is what makes it special and has kept the American science enterprise at the leading edge of innovation. We look forward to working with the authorizing committees to develop a roadmap for NSF that keeps it at the upper echelon of innovation and urge appropriators to stay mindful of NSF's longstanding, unique role as part of the U.S. scientific enterprise.

CENSUS BUREAU, U.S. DEPARTMENT OF COMMERCE

COSSA requests that the Committee appropriate $2 billion for the Census Bureau in fiscal year 2022. Social scientists across the country rely on the Census Bureau

[1] https://www.nap.edu/catalog/24790/the-value-of-social-behavioral-and-economic-sciences-to-national-priorities

for accurate, timely, objective, and relevant data to better understand the U.S. population and to produce findings that help us shape policies that better serve the American people.

After a decade in which the Census Bureau received inconsistent and delayed funding, had to curtail essential research and testing of operations, and experienced significant pandemic-related disruptions, investments are needed to not only help the agency recover, but to also help it improve the collection and delivery of official statistics for the Nation. A modest increase in funding in fiscal year 2022 could help the Census Bureau recover from years of postponed enhancements, sustain and strengthen its mission, and pursue numerous necessary operational innovations. In March 2021, GAO kept the Census on its list of "High Risk" government operations, in part due to these factors.

These efforts are intended to provide the public and private sectors with more robust, granular and timely data for decision-making. COSSA supports efforts in Congress to provide the Bureau with greater authority for multi-year funding, beginning in fiscal year 2022, to strengthen the innovations necessary to consolidate and integrate legacy surveys and systems into a new, more nimble data collection and dissemination model.

In addition, COSSA calls on Congress to fully fund the American Community Survey (ACS) and maintain its status as a mandatory Federal survey. The ACS is the only source of comparable, consistent, timely, and high-quality demographic and socio-economic data for all communities in the U.S. As a component of the Decennial Census, the ACS is a "mandatory" national survey. The disruptions to the 2020 Census caused by the pandemic and natural disasters will likely have an impact on the quality of census data at smaller geographic levels, particular in rural areas. The Census Bureau needs additional funds to expand the ACS sample size (which has not been expanded since 2011) to produce more timely, granular data for a significant number of geographies and sub-populations than currently achievable. This would provide communities more timely data to fill in any gaps in the 2020 results.

NATIONAL INSTITUTE OF JUSTICE, U.S. DEPARTMENT OF JUSTICE

COSSA requests that the Committee appropriate at least $42 million for the National Institute of Justice (NIJ) within the U.S. Department of Justice's (DOJ) Office of Justice Programs (OJP). NIJ serves as the research arm of the Department of Justice, filling an important role in helping the agency to understand and implement science-based strategies for crime prevention and control. It supports rigorous social science research that can be disseminated to criminal justice professionals to keep communities safe.

Despite our growing need for objective, science-backed solutions, over the past decade, NIJ's purchasing power has dropped by 36 percent due to the combined effect of declining appropriations and inflation. Compounding this pressure are Congressionally-mandated directives for specific activities, nearly always without the inclusion of additional funding to the agency's bottom line. Nearly 40 percent of NIJ's fiscal year 2021 appropriation is directed to Congressionally requested research, not including a number of additional projects requested without allocated funding.

BUREAU OF JUSTICE STATISTICS, U.S. DEPARTMENT OF JUSTICE

COSSA urges the Committee to appropriate at least $50 million for the Bureau of Justice Statistics (BJS) within OJP. As the Department's principal statistical agency, the Bureau of Justice Statistics produces high-quality data on all aspects of the United States criminal justice system, including corrections, courts, crime type, law enforcement personnel and expenditures, Federal processing of criminal cases, Indian country justice statistics, and victims of crime.

Despite a growing demand from policymakers, researchers, and other stakeholders for high-quality criminal justice data across an expanding array of variables, BJS has also faced significant budgetary challenges over the past decade. The agency's purchasing power has dropped by more than 37 percent since fiscal year 2011 due to the combined effect of declining appropriations and inflation. This decline in funding has a direct impact on BJS's ability to release its data in a timely manner. Over the past several years, the release of numerous reports and datasets have been delayed—in some cases by several years. In addition, annually collected data has been combined into 2-year reports, further increasing the lag between collection and public release. Data users' frustrations have been exacerbated by the fact that BJS's overall dissemination practices are antiquated and out of step with current best practices for statistical agencies. The agency's website has not had a significant update since at least 2011 and lags its peer statistical agencies in terms of usability, accessibility, and visualizations. BJS needs additional investment to ensure it has

the resources to produce and release data in a timely manner, as well as to enhance its capacity to disseminate the invaluable data to stakeholders who rely on it.

Thank you for the opportunity to offer this statement. Please do not hesitate to contact me should you require additional information.

[This statement was submitted by Wendy A. Naus, Executive Director.]

PREPARED STATEMENT OF THE COURT APPOINTED SPECIAL ADVOCATES/GUARDIAN AD LITEM

Chairman Leahy, Chair Shaheen, Vice Chairman Shelby, Ranking Member Moran, and Members of the Commerce, Justice, Science, and Related Agencies subcommittee, thank you for the opportunity to submit remarks on the Department of Justice (DOJ) fiscal year 2022 budget including funding of the Court Appointed Special Advocates (CASA) Program through the Office of Justice Programs' State and Local Law Enforcement Assistance Account at the fiscal year 2022 President's budget request level of $14 million.

CASA/GAL advocacy is a well-established model strongly associated with improved long-term outcomes for child victims, for which the need continues to be critical. With Congressional support at the requested level, the CASA/GAL network in 49 States and the District of Columbia will enhance and advance specialized training, tools, and resources to continue delivering vital one-on-one best-interest advocacy that addresses the complex and ever-evolving needs of traumatized children who have been victimized by one or more primary caregivers.

Emerging issues such as the commercial sexual exploitation of children and our Nation's growing opioid epidemic—for which children account for an increasing number of victims—both necessitate a greater specialization within one-on-one advocacy, with a keen and deliberate focus on progressing toward the call within the Victims of Child Abuse Act to serve every child victim. As we enrich CASA/GAL advocacy to encompass evolving direct service needs, our National network will further strengthen its capacity to serve over 276,000 child victims of abuse and neglect.

Child victimization and maltreatment by primary caregivers is distressingly on the rise, and with it, so too rises the impact on the child and society. Traumatized victims of child abuse and neglect face significant and multiple risk factors, most notably, juvenile delinquency, adult criminality, and poor educational performance that affects future employment and stability. These issues result in a hefty impact on Federal, State and local spending—at least one-quarter of the DOJ budget is dedicated to our Nation's prison system, and at the same time, the Centers for Disease Control and Prevention (CDC) estimates the economic and social costs of child abuse and neglect to total $124 billion nationwide per annum. Local CASA/GAL programs offer an effective service to child victims of abuse and neglect that improves outcomes, increases the efficient functioning of our court systems, and saves hundreds of millions in Federal and State taxpayer dollars annually in the process.

CASA/GAL programs are, at the heart of their operation, a highly effective leveraging of community-based resources to provide dedicated and sustained one-on-one advocacy for child victims and advise the courts of the child's best interests and needs throughout abuse and neglect proceedings. Research has shown that the presence of a caring, consistent adult in the life of a child victim is associated with improved long-term outcomes. These efforts, which focus on helping the child find a safe, permanent home where they can both heal and thrive, require thorough background screening, specialized training, and resources to promote a nationwide system of programs that adhere to and assure the highest quality of services and care for the child victim.

CASA Program funds through DOJ achieve and uphold national standard setting, assessment, accountability, and evaluation across nearly 950 local, State, and Tribal programs to promote improved child outcomes and effective stewardship of public investments in victim advocacy. Evidence-based practices, intensive technical assistance, direct program guidance and partnerships, and national program standards and quality assurance processes all lie at the foundation of effective CASA/GAL program service delivery in communities across the Nation.

Given the nature of the CASA/GAL advocates' intensive work with child victims of abuse and neglect, standards of rigorous screening, training, supervision, and service are implemented nationwide, with congressional support, to ensure consistent quality for victims who directly benefit from having their needs and rights championed in the courtroom and in the community. Comprehensive pre-service, in-service, and issue-focused training curricula—including training in disproportionality, cultural competency, and working with older youth—ensures a cutting edge approach to victim services centered on the child thriving well into the

future as a member of the community. Federal support is foundational to the solid and high-quality functioning of a national child advocacy network for victims of abuse and neglect.

As the needs of child victims of abuse and neglect grow and change, so must the specialization of one-on-one advocacy and services by CASA/GAL programs. Since the Victims of Child Abuse Act was passed, the landscape of victims' services for children has evolved significantly. Researchers and practitioners know more now than ever about trauma, and its associated impacts on child development, as well as the significant and multiple risk factors and issues faced by abused and neglected children such as mental health/post-traumatic stress disorder (PTSD), commercial sex trafficking, overmedication, and the growing effects of substance abuse and the opioid epidemic in particular. Further, we know that youth of color in particular face very significant challenges—in addition to victimization—on their path to a thriving adulthood. CASA/GAL advocates bring one-on-one attention and a dedicated focus to each of the issues that the child victim faces, but additional resources are needed to enhance and build their knowledge base as part of a continuous advocacy development process.

These complex issues warrant adaptive and responsive training, technical assistance, and resources, while continuing on a trajectory of maintaining quality care and services within current CASA/GAL caseloads and also simultaneously building the capacity to take on additional cases when appointed by the court. National CASA/GAL Association is committed to continuous improvement of training, technical assistance, and resource delivery to strengthen and support local CASA/GAL programs and State organizations to help advocates remain at the forefront of emerging child welfare issues.

Federal support at the requested level is instrumental to bridging advocacy training and best practice tools into multiple and new emerging issue areas including child sex trafficking, substance abuse and opioid-overuse, and the overmedication of child victims, for example. Advocates need to be well versed in warning signs for these issues, as well as the available services, resources, and coordination of community and court efforts in order to best address the child victim's case.

Fiscal year 2022 funding of $14 million will be targeted to fortifying resources and training generally for CASA/GAL programs, and in key focus areas including commercial sexual exploitation, children impacted by substance abuse disorders, children of incarcerated parents and young people aging out of foster care, based upon existing best practices and models. In addition, this Federal funding will be used to target resources to serve over 276,000 child victims of abuse and neglect, and continue efforts toward the development of State CASA/GAL organizations in the States currently without this resource that enhances support of program service delivery in local communities. Additional projects include sustaining development of training on best practices in addressing the needs of children impacted by the opioid epidemic and other forms of substance abuse, child sex trafficking, unaccompanied children and addressing racial disproportionality in child welfare and the need for racially and culturally sensitive recruitment and matching of CASA/GAL advocates.

According to the most recent government data available, the number of child maltreatment cases has increased to over 700,000 per annum. This remains a significant population with equally significant and complex issues and risk factors. Without the benefit of a specially trained CASA/GAL advocate that is able to devote dedicated time and attention to the details of the case, the child victim faces a complex and cumbersome court process and foster care system that is overwhelmed, overburdened, and under-resourced. Our ability as a national network to serve every child victim of abuse and neglect is directly tied to strengthening and expanding a foundational and interwoven program of advocate training, technical assistance, standards, tools, and resources that are funded with DOJ support.

While children who are the victims of maltreatment have suffered deep layers of trauma, these experiences do not have to be their only life story. Juvenile detention and adult incarceration do not have to be the path to their future. Substance abuse, PTSD, homelessness, and joblessness do not have to be the basis of their experiences. We can change their trajectory, together, with congressional support.

Caring, dedicated, and extensively trained CASA/GAL advocates bring about positive changes in the lives of child victims. Full funding is needed to continue expanding the advocate pipeline, enhance the training, resources, and services provided to and through CASA/GAL programs, and strengthen outcomes for future members of our Nation's workforce.

We urge the subcommittee to support the President's fiscal year 2022 budget request for the Court Appointed Special Advocates Program to address the overwhelming need for dedicated advocacy on behalf of child victims of abuse and neglect. Thank you for your consideration.

[This statement was submitted by Tara L. Perry, Chief Executive Officer.]

PREPARED STATEMENT OF CRS REMEMBERED

NOS QUOQUE SERVIVIT

DEAR REPRESENTATIVE DE LAURO AND SENATOR SHAHEEN:

CRS Remembered, a private membership organization of retired and former employees of the Community Relations Service (CRS)of the U.S. Department of Justice, respectfully urges the subcommittee on Commerce, Justice, Science, and Related Agencies to provide CRS with a budget of not less than $50-million.for its community peace building efforts.

As you know CRS is the only Federal agency that is specifically dedicated to working with community groups and local government agencies to prevent, de-escalate, and resolve community-wide conflicts based on race, color, and national origin. It was established by Congress at a time in 1964 when our country was experiencing increasing levels of divisive racial tensions . In this regard at the signing of the historic 1964 Civil Right Act President Lyndon Johnson said, "come, let us reason together." Clearly, now is the time for Congress to step up again to support the ideals of a democratic society that comes together to work out its racial. Ethnic and other social differences thru dialogue at a peace table instead of thru confrontation and violence at the street level.

As the U.S. again hits historic levels of polarization and division, America needs CRS (the nation's peacemaker) to effectively help civic non-governmental organizations and local government agencies resolve local conflicts arising out of differences based on race color, national origin and other underlying personal human attributes. Unfortunately, CRS is now down to just 16 peacemaking mediators for the entire number of States and territories under its jurisdiction. President Biden's fiscal year 2022 budget requests $20-million for CRS, a funding level is simply not enough to make a dent in the enormous problem of endemic intracommunity divisiveness that plagues our Nation today.

In closing we again urge you to invest in America's domestic peacebuilding capacity by providing at least $50-million to CRS to also include a funding a grants program to support domestic locally-based, non-profit peace making groups.

[This statement was submitted by Miguel J. Hernandez on behalf of CRS Remembered.]

PREPARED STATEMENT OF CYNTHIA MOUSSEAU, JD

ON BEHALF OF NEW ENGLAND INNOCENCE PROJECT AND THE NATIONAL INNOCENCE NETWORK

INNOCENCE AND FORENSIC SCIENCE PROGRAMS AT THE DEPARTMENTS OF JUSTICE & COMMERCE

My name is Cynthia Mousseau and I serve as a Staff Attorney at the New England Innocence Project (NEIP). On behalf of NEIP and as a member of the Innocence Network, a coalition of approximately 60 local innocence organizations working to exonerate the innocent and prevent wrongful convictions nationwide, thank you for the subcommittee's critical funding increases and strong support for innocence and forensic science programs in fiscal year 2021. Thank you also for allowing me to submit written testimony for the record as you consider appropriations requests for fiscal year 2022. I urge you to please increase funding for the following programs at the Bureau of Justice Assistance at the Department of Justice and at the National Institute of Standards and Technology at the Department of Commerce, including:

—$15 million for the Wrongful Conviction Review Program at the Department of Justice's (DOJ) Bureau of Justice Assistance (BJA) *(the Wrongful Conviction Review Program is part of the Capital Litigation Improvement Program);*

—$15 million for the Kirk Bloodsworth Post-Conviction DNA Testing Program at DOJ/BJA

—$25 million for the Department of Commerce's National Institute of Standards and Technology (NIST) to support and conduct foundational forensic science research, *including $2 million* for technical merit evaluations.

These innocence and forensic science programs increase the fairness and accuracy of the criminal legal system; address arbitrary racial disparities and inequities; provide the strongest possible forensic science tools to legal system stakeholders; and generate greater public safety for our Nation.

Data from the National Registry of Exonerations show that the number of exonerations has significantly increased since Federal innocence programs—the Bloodsworth Post-Conviction DNA Testing and Wrongful Convictions Review programs—began receiving funding in 2008 and 2009, respectively. Between 2009 and 2016, *the total number of exonerations increased by 82 percent.* This dramatic increase is in part *a result of the decision to invest in these programs.*

2019 set the record for the highest number of years individuals lost to being wrongfully convicted—an average of 13.3 years per exoneree. More than 25,000 life years have been lost to wrongful incarceration. The National Registry of Exonerations currently lists more than 2,800 exonerations since 1989. Half of the people exonerated are Black, *and innocent Black people spend approximately 45 percent longer wrongfully imprisoned* than innocent white people. This racial disparity holds true across different types of convictions. Investing in innocence and forensic science progams helps *to increase the accuracy, equity, and integrity of the criminal legal system.*

The New England Innocence Project (NEIP), headquarted in Massachussetts, is the only innocence organization serving Vermont, Maine, Rhode Island, and New Hampshire. Federal grant funds help expand its reach into States that have insufficient resources to meet their needs. With the support of Federal funds, NEIP *has provided direct representation and/or support that has resulted in 16 exonerations over the past 17 years. 5 recently released exonerees collectively spent 160 years in prison.* Additionally, NEIP has: (1) organized a work group with the Middlesex District Attorney's Office, the Massachusetts public defender agency's innocence program, and the Massachusetts State Police Crime Lab to establish a pilot program to identify wrongful convictions caused by erroneous microscopic hair analysis; (2) conducted numerous trainings throughout New England for prosecutors, defense attorneys, law enforcement, judges, and the public to raise awareness and prevent causes of wrongful conviction, including eyewitness misidentification, false confessions, flawed forensic science, and racial bias; and (3) provided technical assistance for the proper implementation of conviction integrity units.

Cases without DNA evidence are difficult and often take many years to complete. It is a long, arduous, and resource intensive process to prove an individual's innocence after he/she has been wrongfully convicted. *An average case at NEIP requires years of work and thousands of dollars to adequately investigate and litigate.* During this very long time, the innocent person is languishing behind bars.

Freeing innocent individuals and preventing wrongful convictions through reform also *greatly benefits public safety.* Every time DNA identifies a wrongful conviction, it enables the possible identification of the person who actually committed the crime. *Such true perpetrators have been identified in more than half of the DNA exoneration cases.* Unfortunately, many of these individuals went on to commit additional crimes while an innocent person was convicted and incarcerated in their place.

To date 375 individuals in the United States have been exonerated through DNA testing, including 21 who served time on death row. However, the value of Federal innocence and forensic science programs is not to just these exonerated individuals. It is important to fund these critical programs because reforms and procedures that help to prevent wrongful convictions also enhance the accuracy of criminal convictions and result in a fairer and more accountable system for victims of crime.

WRONGFUL CONVICTION REVIEW PROGRAM

We know that wrongful convictions occur in cases where DNA evidence may be insufficient or unavailable to prove innocence. The National Registry of Exonerations currently lists more than 2,800 exonerations since 1989, the vast majority of which did not have the presence or benefit of testable DNA. The Wrongful Conviction Review Program provides critical support to ensure that experts are available to navigate the complex landscape of post-conviction litigation, as well as oversee the thousands of volunteer hours local innocence organizations leverage to help investigate these complex non-DNA cases and support the significant legal work they

require. *The Wrongful Conviction Review Program has contributed to approximately 37 exonerations over the past 4 years.*

For example, in 2019, Darrell Jones, who was wrongfully convicted of murder and served 32 years, was freed as a result of the work of the Committee for Public Counsel Services Innocence Program. The Wrongful Conviction Review Program provided funding that enabled his team to hire an investigator who identified exculpatory witnesses as well as two forensic experts. In 2020, Arturo Jimenez, who was wrongfully convicted of murder and served 25 years, was freed because the Wrongful Conviction Review program funded an investigator who uncovered key evidence that helped the Northern California Innocence Project secure his exoneration.

The Wrongful Conviction Review Program provides funding to local innocence organizations so that they may provide this type of expert, high quality, and efficient representation for innocent individuals. The program's goals also are to help alleviate burdens placed on the criminal legal system through costly and prolonged post-conviction litigation and to identify, when possible, the person who actually committed the crime.

In recent years, approximately 10–15 percent of local innocence organizations received Wrongful Conviction Review funding. To continue and expand this important work, I urge you to provide *$15 million for the Wrongful Conviction Review Program in fiscal year 2022. (Please note the Wrongful Conviction Review Program is part of the Capital Litigation Improvement Program.)*

I also urge you to include in the fiscal year 2022 report for the Commerce, Justice, Science, and Related Agencies Appropriations bill the final fiscal year 2021 report language for the Wrongful Conviction Review program. It described the need for legal representation and investigation services for individuals with post-conviction claims of innocence. It also directed at least 50 percent of funds appropriated to the Capital Litigation Improvement and Wrongful Conviction Review grant programs support Wrongful Conviction Review grantees providing high quality and efficient post-conviction representation for defendants in post-conviction claims of innocence. It also clarified that Wrongful Conviction Review grantees shall be nonprofit organizations, institutions of higher education, and/or State or local public defender offices that have in-house post-conviction representation programs that show demonstrable experience and competence in litigating postconviction claims of innocence. Finally, the report language directed that grant funds shall support grantee provision of post-conviction legal representation of innocence claims; case review, evaluation, and management; experts; potentially exonerative forensic testing; and investigation services related supporting these post-conviction innocence claims.

THE BLOODSWORTH POST-CONVICTION DNA TESTING PROGRAM

The Bloodsworth Program supports States and localities that want to pursue post-conviction DNA testing in appropriate cases. Grantees range from State and local prosecutor offices to law enforcement agencies and crime labs, which can collaborate with local innocence organizations when appropriate. For example, an Arizona grant allowed the State's Attorney General's Office to partner with Arizona Justice Project to create the Post-Conviction DNA Testing Project that canvassed incarcerated individuals, reviewed cases, located evidence, and filed joint requests with the court to release evidence for DNA testing. In addition to identifying the innocent, *Arizona Attorney General Terry Goddard noted that the "grant enable[d] [his] office to support local prosecutors and ensure that those who have committed violent crimes are identified and behind bars."*

The Bloodsworth program is a powerful investment for States seeking to free innocent individuals and identify the individuals who actually committed the crimes. The program has resulted in the exonerations of *at least 51 wrongfully convicted persons in 14 States. The person who actually committed the crime was identified in 13 of those cases.* In 2020, an *additional 5 people were exonerated* through the program. The success of this program both in generating individual exonerations while supporting broader system review when problems arise has made it popular—*DOJ has reported in recent years that it has received twice as many qualified applicants as it has funding to grant.*

For example, Virginian Thomas Haynesworth, who was wrongfully incarcerated for 27 years, was freed thanks to Bloodsworth-funded DNA testing that also revealed the person who actually committed the crime. The culpable person in that case went on to terrorize the community by attacking 12 women, with most of the attacks and rapes occurring while Mr. Haynesworth was wrongfully incarcerated. Given the importance of this program to both innocent individuals and public safety, I urge you to provide the *$15 million to continue and expand the work of the Bloodsworth Post-Conviction DNA Testing Program in fiscal year 2022.*

FORENSIC SCIENCE IMPROVEMENT

To continue the critical work to improve forensic science, and help prevent wrongful convictions, I urge you to provide *$25 million* for NIST to support foundational forensic science research, *including $2 million* to conduct technical merit evaluations.

As the Federal entity that is both perfectly positioned and institutionally constituted to conduct foundational forensic science research, NIST's work will improve the validity and reliability of forensic evidence, a need cited by the National Academy of Sciences 2009 report, *Strengthening Forensic Science in the United States: A Path Forward.* NIST's reputation for innovation will result in technological solutions to advance forensic science applications and achieve a tremendous cost savings by reducing court costs posed by litigating scientific evidence.

Additionally, some forensic science methods have not yet received an evaluation of their technical merit and NIST needs additional support to conduct these vital reviews. The forensic science activities and research at NIST will help to improve forensic disciplines and propel forensic science and the criminal legal system toward greater accuracy and reliability, and as a result, help prevent wrongful convictions and improve system equity.

CONCLUSION

Thank you for your leadership in ensuring the accuracy, equity, and integrity of our Nation's criminal legal system. I urge you to support all of the aforementioned programs, including the Wrongful Conviction Review and Bloodsworth grant programs at DOJ's Bureau of Justice Assistance, as well as NIST forensic science research at the Department of Commerce. If you have questions or need additional information, please contact Jenny Collier, Federal Policy Advisor to the Innocence Project, at jcollier@colliercollective.org.

PREPARED STATEMENT OF THE DAUGHTERS OF PENELOPE

FISCAL YEAR 2022 FUNDING: VAWA, VOCA PROGRAMS & CRIME VICTIMS FUND

Chairwoman Jeanne Shaheen, Ranking Member Jerry Moran, and distinguished Members of the Commerce, Justice, and Science Appropriations subcommittee, the Daughters of Penelope (DOP), an international service organization for women of Greek heritage and Philhellenes, which is dedicated in part to supporting victims of domestic violence, is requesting support for Victims of Crime Act (VOCA) (Office of Justice Programs—OVC) and Violence Against Women Act (VAWA) (Office of Violence Against Women—OVW) programs at the Department of Justice. Specifically, we request a Crime Victims Fund cap for fiscal year 2022 to be set at least at $2.65 billion and without any transfers to programs not authorized under the VOCA statute. Further, we call for the Senate to pass S.611, VOCA Fix to Sustain the Crime Victims Fund Act of 2021. Moreover, we support the Biden administration's strong proposed investment request of $1 billion for VAWA programs and for Congress to pass a strong bipartisan-backed reauthorization of VAWA.

VOCA PROGRAMS & CRIME VICTIMS FUND

The Victims of Crime Act (VOCA) created the Crime Victims Fund (CVF), which serves as a mechanism to fund compensation and services for the Nation's victims of Federal crime. The Fund is comprised of money from criminals, and by law, the Fund is dedicated solely to victim services. For example, the Fund is used to help pay for State victim compensation and assistance programs and grants to victim service providers. A considerable amount supports victims' out-of-pocket expenses such as medical and counseling fees, lost wages, and funeral and burial costs. According to the Department of Justice, in fiscal year 2018, Victim Assistance programs funded 7,417 unique State and local victim service organizations through over 9,472 grant awards.[1] These agencies provided services to nearly millions of victims of crime, including victims of murder, assault and sexual assault, domestic violence, child abuse, stalking and elder abuse, and others.

The Crime Victims Fund is financed by fines, forfeitures, or other penalties paid by Federal crime offenders. *Therefore, the Crime Victims Fund is not funded by taxpayer dollars.* However, it is unfortunate Congress often carves out funds from the CVF to use as offsets for other government programs. Because CVF is comprised of non-taxpayer dollars, it should not be considered available for use for non-VOCA

[1] https://www.justice.gov/jmd/page/file/1160581/download, Page 59.

programs in the Federal budget. Moreover, according to a previous statement of the Congressional Victims' Rights Caucus, "not only does raiding the Crime Victims Fund violate the intent of the law, but it violates the [VOCA] statute itself..." Therefore, we recommend to the subcommittee that the Fund be used only for programs authorized under the VOCA statute. However, recent appropriations bills passed by Congress, and previous administrations' budget requests, have carved out funds from the Crime Victims Fund for non-VOCA authorized programs. As examples, the fiscal year 2021 appropriations year-end legislative package transferred $435 million from the CVF to VAWA programs. We request the elimination of transfers that harm the Fund's long-term viability and ability to commit fully to crime victims. Another unfortunate development has been that over the course of the last decade, the Department of Justice has brought fewer Federal criminal cases and has instead entered into deferred prosecution and non-prosecution agreements. The monetary penalties from these agreements are deposited into the General Treasury rather than into the CVF, resulting in the loss of billions of dollars. This has resulted in catastrophic cuts to VOCA. Grants have decreased by 70 percent over the last 4 years. This is why we support swift passage of S.611, VOCA Fix to Sustain the Crime Victims Fund Act of 2021 and sincerely thank the U.S. House of Representatives for passing its companion bill, H.R.1652. Finally, we recommend setting the Crime Victims' Fund cap to at least $2.65 billion. Congress established an appropriation cap on funds available for distribution intended to maintain the CVF as a stable source of support for future victim services. At the cap level, Congress will not only ensure the continuation of enhanced services to victims to meet their needs, but it also does not contribute or add to the National debt or deficit because these are non-taxpayer funds.

VAWA PROGRAMS

Domestic violence is a pervasive, life-threatening crime affecting millions of individuals across our Nation regardless of age, gender, socio-economic status, race or religion. The statistics are alarming. According to the National Network to End Domestic Violence (NNEDV):[2]

—More than 1 in 3 women have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime.
—Approximately 8 million women are raped, physically assaulted, and/or stalked by a current or former intimate partner each year.
—1 in 5 women and 1 in 71 men have experienced rape in her or his lifetime.
—Nationwide, an average of 3 women are killed by a current or former intimate partner every day.

According to the Centers for Disease Control and Prevention (CDC) and The National Intimate Partner and Sexual Violence Survey (NISVS) 2015 Data Brief:

—In the United States, intimate partner contact sexual violence, physical violence, and/or stalking was experienced by 36.4 percent (or 43.6 million) of U.S. women during their lifetime.[3]
—One in 4 women and 1 in 10 men have experienced physical violence by an intimate partner during their lifetime.[4]
—In 2015, 1,270 women and men were murdered by an intimate partner (e.g. husband, wife, boyfriend, girlfriend).[5]

Also, of concern, are the following stats:

—On average, nearly 20 people per minute are physically abused by an intimate partner in the United States. During 1 year, this equates to more than 10 million women and men.[6]
—Nationwide, an average of 3 women are killed by a current or former intimate partner every day.[7]
—Approximately 15.5 million children are exposed to domestic violence annually.[8]

Our Nation's response to intimate partner and domestic violence is driven by VAWA programs. Each of these programs is critical to ensuring that victims are

[2] NNEDV Domestic Violence Fact Sheet, accessed https://nnedv.org/wp-content/uploads/2019/07/Library__General__DV__SA__Factsheet.pdf
[3] https://www.cdc.gov/violenceprevention/pdf/2015data-brief508.pdf
[4] https://www.cdc.gov/violenceprevention/pdf/NISVS-infographic-2016.pdf
[5] https://www.cdc.gov/violenceprevention/pdf/NISVS-StateReportBook.pdf
[6] https://www.cdc.gov/violenceprevention/pdf/nisvs__report2010-a.pdf
[7] NNEDV Domestic Violence Fact Sheet, accessed https://nnedv.org/mdocs-posts/domestic-violence-and-sexual-assault-factsheet/
[8] Ibid.

safe, that offenders are held accountable, and that our communities are more secure. Thanks to VAWA, steady progress has been made there are many victims who still suffer in silence. A 2019 24-hour survey of domestic violence programs across the U.S. found that although 19,159 Hotline calls were answered (averaging more than 13 calls every minute). However, 11,336 requests for services (such as emergency shelter, transportation, or legal representation) went unmet because programs lacked the resources to provide them.[9] Sixty-eight percent of the unmet services were for Housing and Emergency Shelter. In total, 77,226 victims were served in 1 day. The unconscionable gap between need and resources only widens.

DAUGHTERS OF PENELOPE'S WORK TO SUPPORT DOMESTIC VIOLENCE SHELTERS

Why are VAWA and VOCA programs important to the Daughters of Penelope? In addition to our chapters supporting domestic violence shelters in their respective local communities, the Daughters of Penelope is a national sponsor and stakeholder of two domestic violence shelters—Penelope House in Mobile, Alabama, and Penelope's Place in Brockton, Massachusetts. In the past, the Daughters of Penelope has supported WIN Hellas, which is an NGO based in Athens, Greece that is active in the prevention of violence against women.

Penelope House was the first shelter established in Alabama when it opened its doors in 1979. Since then, Penelope House is recognized as a model shelter for others to emulate. VAWA and VOCA grant funding has been critical in helping Penelope House to meet its mission of providing safety, protection, and support to victims of domestic violence and their children through shelter, advocacy, and individual and community education. Penelope House has been awarded VAWA and VOCA grants from the following programs: Shelter Services, Court Advocate Program, and Transitional Living Program. Portions of these grants help to fund the case managers, case and court advocates, and children's counselors and program coordinators, among other employees who help to provide the life-saving support to domestic violence victims and their children.

STATISTICS—EFFECTIVENESS AND IMPORTANCE OF VAWA & VOCA GRANT FUNDING

—VOCA/VAWA grant funding comprised 30 percent of Penelope House's 2020 budget.
—VOCA is the largest source of Penelope House's funding.

Penelope House's Court Advocacy Program is funded by VOCA & VAWA. Its 2020 stats, which were greatly impacted by the coronavirus pandemic, for clients served were:

—Adult Clients: 5,997
—Children: 5,344
—Court Appointments with Clients: 4,078
—Clients Assisted to obtain protection from abuse or no contact orders: 1,000

VOCA supports the salaries and benefits for seven Court/Victim Advocates who provide services to victims of domestic violence throughout Mobile, Washington, Clarke and Choctaw Counties of Alabama as they navigate within the court system. (VOCA grant funding has become increasingly important to Penelope House because Penelope House's services has been expanded to include more counties in Alabama.)

VAWA supports a full-time Court Advocate Administrative Assistant and a portion of the salary for a Court/Victim Advocate for the Court Advocacy Program. The Court Advocate Administrative Assistant provides administrative support to Court/Victim Advocates and assistance to the Court Advocacy Supervisor. The assistant also collects and complies program data needed for the evaluation of the Court Advocacy Program. The Court Advocate Administrative Assistant is dually trained to serve as a Court/Victim Advocate when necessary, in case of illness or any other absence of court advocates. Thus, a victim will not have to be alone as he/she attempts to navigate within the court system.

Penelope House's Emergency Shelter Program is funded by VOCA. It's 2020 service stats—again adversely impacted due to the pandemic-were:

—Adults sheltered: 252
—Children sheltered: 273
—Total Client Service Hours: 10,536.5
—Total Nights of shelter provided: 4,881
—Crisis calls: 1,419
—Meals Served: 14,573

[9] 14th Annual National Domestic Violence Counts National Summary.

RECOMMENDATION

The Daughters of Penelope (DOP) is requesting support for Victims of Crime Act (VOCA) and Violence Against Women Act (VAWA) programs, which are vital to DOP programs that serve its mission. *Specifically, we request a Crime Victims Fund cap for fiscal year 2022 to be set at least $2.65 billion and without any transfers to programs not authorized under the VOCA statute. We also support the Biden administration's strong investment request of $1 billion VAWA programs.* The Crime Victims Fund is not funded by taxpayer dollars. Therefore, the cap can be sustained or raised without adding to the National debt or deficit and transfers (or carve outs) must be eliminated in fiscal year 2022 and going forward.

Clearly, as the missions of domestic violence centers across the country, such as Penelope House, have expanded into jurisdictions due to the unfortunate increased need to provide victims' services, the viability of the CVF and VOCA and VAWA grants have become increasingly important to meet the victims' needs. Moreover, it is estimated the COVID–19 pandemic caused an estimated 8.1 percent increase in domestic violence incidents due to stay-at-home orders.[10] Thank you for the opportunity to present and submit our written testimony before the subcommittee.

[This statement was submitted by Elena Saviolakis, Executive Director.]

PREPARED STATEMENT OF DEMAND PROGRESS

TRANSPARENCY AND THE PUBLIC AVAILABILITY OF OPINIONS ISSUED BY THE JUSTICE DEPARTMENT'S OFFICE OF LEGAL COUNSEL

DEAR CHAIRMAN SHAHEEN, RANKING MEMBER MORAN, AND MEMBERS OF THE COMMITTEE:

Thank you for the opportunity to submit testimony on improving transparency and accountability for legal opinions rendered by the Office of Legal Counsel at the Department of Justice.

Background

The Office of Legal Counsel's (OLC) core function, according to an OLC memoranda, is to provide "controlling advice to Executive Branch officials on questions of law that are centrally important to the functioning of the Federal Government."[1] This legal advice "may effectively be the final word on the controlling law," yet it is routinely withheld from both Congress and the public.[2] This withholding in effect creates secret law that controls agency actions but is shielded from both public debate and Congressional oversight.

Secrecy undermines accountability. Congress must understand how the Executive branch interprets the Constitution and implements laws enacted by Congress. Allowing OLC legal opinions to remain the sole province of the Executive branch thwarts Congress's lawmaking and oversight prerogatives. It removes consequences for agency decisions and short-circuits the public feedback process integral to our democracy.

Secrecy also poisons the operations of the Office of Legal Counsel. Public scrutiny would create an invisible but persistent pressure for the promulgation of responsible, high quality, objective legal opinions. By contrast, OLC legal opinion secrecy ensures the most salient incentive for OLC attorneys is to lean towards a legal opinion that a given administration desires—not the legal opinion that best reflects the law. There are high profile examples of this happening.[3] Building transparency into the process helps ensure that OLC legal analyses face scrutiny by Congress, scholars, and members of the public.

In December 2004, 19 former senior DOJ officials—including the now-nominee for Assistant Attorney General for OLC, Christopher Schroeder—endorsed a document calling for increased transparency, entitled *Principles to Guide the Office of Legal*

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[10] https://phys.org/news/2021–04-domestic-violence-pandemic.html

[1] Department of Justice, Memorandum for Attorneys of the Office re: Best Practices for OLC Advice and Written Opinions, July 16, 2010, available at: https://www.justice.gov/sites/default/files/olc/legacy/2010/08/26/olc-legal-advice-opinions.pdf

[2] *Id.*

[3] See, for example, a Statement by Sen. Patrick Leahy at a February 26, 2010 hearing before the Senate Committee on the Judiciary entitled *The Office of Professional Responsibility Investigation into the Office of Legal Counsel Memoranda,* in which he said, "The fundamental question here is not whether these were shoddy legal memos. They were shoddy legal memos. Everybody knows that. . . . It failed to cite significant case law; it twisted the plain meaning of statutes. *The legal memoranda were designed to achieve an end.*" (emphasis added). See also

Counsel.[4] One principle was that "OLC should publicly disclose its written legal opinions in a timely manner, absent strong reasons for delay or nondisclosure."[5] According to the *Principles* document, public disclosure of written legal opinions is important because:

> *Such disclosure helps to ensure executive branch adherence to the rule of law and guard against excessive claims of executive authority.* Transparency also promotes confidence in the lawfulness of governmental action. Making executive branch law available to the public also adds an important voice to the development of constitutional meaning-in the courts as well as among academics, other commentators, and the public more generally-and a particularly valuable perspective on legal issues regarding which the executive branch possesses relevant expertise.[6]

A similar statement on the Office of Legal Counsel and the rule of law was released in October 2020, with significant contributions from a comparable array of legal experts.[7] It endorsed publication of and transparency for OLC opinions. Specifically, the statement endorsed: a strong presumption in favor of publishing final OLC opinions; disclosing OLC advice deemed classified, privileged, or sensitive to congressional committees when an agency relies upon that advice to justify a major policy decision or executive action; and releasing a public index of its memoranda. "OLC exercises a form of public trust, and because its views of the law's meaning shape executive action and policy, Congress and the public both have compelling interests in understanding the legal basis of executive action."

Recommendations

The good news is Congress can remedy this secret law problem. Our request is twofold. First, direct the Office of Legal Counsel to make its opinions publicly available upon promulgation, except in narrow circumstances. Second, direct the Office of Legal Counsel to release an index of all current OLC opinions and keep it up-to-date.

We note that OLC legal opinions are rendered both as "formal opinions" and "informal advice." Both constitute legal advice that is binding within the Executive branch, follow a formal approval process, have precedential value within OLC, and are tracked in an OLC database. The major distinction is only the *format* in which the advice is rendered: a "formal opinion" is turned into a carefully formatted, written document and some are published online, whereas "informal advice" may be rendered as an email or in verbal form, which is then reduced to a memo for the record. Accordingly, we would apply the principle of transparency first articulated in the *Principles* document to disclosure of OLC legal opinions regardless of format.

The default rule must be that OLC legal opinions will be made publicly available contemporaneously with their issuance. While there will be exceptions to public disclosure, those exceptions should be narrow, constrained, and used only when absolutely necessary. Congress should still be informed.

Congress should also direct OLC to publicly release an index of all its opinions and to keep that list up to date. It should contain the full name of the opinion; the date it was finalized or revised; each author's name (i.e., the person who signed it); each recipient's name; identify whether the opinion has been withdrawn; and other salient information.

There is precedent for an index. The FOIA Improvement Act, enacted in 2016, established a 25-year limit for the Executive branch to assert deliberative process privilege as an exemption to a FOIA request.[8] A resulting lawsuit brought by the Knight First Amendment Center, *Francis v. DOJ,* resulted in an agreement where-

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[4] "Principles to Guide the Office of Legal Counsel" (Dec. 21, 2004), available at: https://scholarship.law.duke.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2927&context=faculty__scholarship. In 2020, a related statement was released by the American Constitution Society, entitled "The Office of Legal Counsel and the Rule of Law," and a comparable constellation of legal experts contributed to that document. It endorses a strong presumption in favor of publishing final OLC opinions, disclosing its classified, privileged, and sensitive material to Congress when an agency relies upon OLC advice to justify a major policy decision or executive action, and releasing a public index of its memos. https://www.acslaw.org/wp-content/uploads/2020/10/OLC-ROL-Doc-103020.pdf

[5] *Id.*

[6] *Id.* (emphasis added)

[7] "The Office of Legal Counsel and the Rule of Law," American Constitution Society (October 2020), available at: https://www.acslaw.org/wp-content/uploads/2020/10/OLC-ROL-Doc-103020.pdf.

[8] Public Law 114–185 (114th Congress). https://www.congress.gov/bill/114th-congress/senate-bill/337

by the DOJ is producing indexes of OLC opinions more than 25 years old.[9] Similarly, the 2020 statement by legal experts endorsed indices.

We are aware of some limited disclosure provisions within the 2010 Office of Legal Counsel *Memorandum for Attorneys of the Office: Best Practices for OLC Legal Advice and Written Opinions.*[10] It fails, however, to include a presumption of disclosure and creates multiple veto points. The last dozen years have demonstrated that *this memorandum does not go far enough to protect the integrity of OLC legal opinions or confidence in the work of OLC attorneys.* Indeed, the 2020 statement by legal experts declares "*OLC itself has been in crisis for some time.*"

Legislative Text

The committee report accompanying the House CJS Appropriations Committee included language in fiscal year 2021 and fiscal year 2020 that, if written into bill text, would favorably resolve the issue.[11] We recommend that the Senate adopt that language:

> To serve the public interest, and in keeping with transparency and the precedent of public reporting of judicial decisions, the Committee asks the Attorney General to direct OLC to publish on a publicly accessible website all legal opinions and related materials, except in those instances where the Attorney General determines that release would cause a specific identifiable harm to the National defense or foreign policy interests; information contained in the opinion relates to the appointment of a specific individual not confirmed to Federal office; or information contained in the opinion is specifically exempted from disclosure by statute (other than sections 552 and 552b of title 5, United States Code). For final OLC opinions for which the text is withheld in full or in substantial part, the Attorney General should provide Congress a written explanation detailing why the text was withheld.
>
> In addition, the Attorney General should also direct OLC to publish on a publicly accessible website a complete index of all final OLC opinions in both human-readable and machine-readable formats, arranged chronologically, within 90 days of the enactment of this act, which shall be updated immediately every time an OLC opinion or a revision to an opinion becomes final. The index shall include, for each opinion: the full name of the opinion; the date it was finalized or revised; each author's name; each recipient's name; a unique identifier assigned to each final or revised opinion; and whether an opinion has been withdrawn.

The language was superseded in the joint explanatory statement for fiscal year 2021 and fiscal year 2020 that make the request more diffuse and, in light of recent experience, was unduly deferential to the Justice Department. As the underlying issue persists, we respectfully suggest it is time to take a more robust approach.

To ensure an informed public, to protect against secret law, and to allow Congress to exercise its oversight responsibilities, OLC legal opinions must be available to the public and Congress. Thank you again for the opportunity to submit this testimony.

[This statement was submitted by Ginger McCall, Legal Director.]

PREPARED STATEMENT OF ELI PARSON, GRADUATE OF THE SAN FRANCISCO FAMILY TREATMENT COURT, SAN FRANCISCO, CALIFORNIA

ON BEHALF OF THE NATIONAL ASSOCIATION OF DRUG COURT PROFESSIONALS

Chairwoman Shaheen, Ranking Member Moran, and distinguished Members of the subcommittee, I am honored to have the opportunity to submit my testimony on behalf of the 1.5 million graduates of treatment court programs and the 150,000

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[9] The Knight First Amendment Institute at Columbia University is publishing the index on its website. https://knightcolumbia.org/reading-room/olc-opinions.

[10] See "Best Practices for OLC Legal Advice and Written Opinions," Office of Legal Counsel (July 2010), available at https://www.justice.gov/sites/default/files/olc/legacy/2010/08/26/olc-legal-advice-opinions.pdf

[11] See Report, *Commerce, Justice, Science and Related Agencies Appropriations Bill, 2021,* H. Rpt. 116–455, p. 59, https://www.congress.gov/116/crpt/hrpt455/CRPT-116hrpt455.pdf, superseded by Joint Explanatory Statement, p. 61, https://docs.house.gov/billsthisweek/20201221/BILLS-116RCP68-JES-DIVISION-B.pdf; see Report, *Commerce, Justice, Science and Related Agencies Appropriations Bill, 2020,* H. Rpt. 116–101, pp. 45–46, https://www.congress.gov/116/crpt/hrpt101/CRPT-116hrpt101.pdf, superseded by Joint Explanatory Statement, p. 30, https://appropriations.house.gov/sites/democrats.appropriations.house.gov/files/HR%201158%20-%20Division%20B%20-%20CJS%20SOM%20FY20.pdf.

people the programs will connect to lifesaving addiction and mental health treatment this year alone. Given the overlapping crises of substance use and the COVID–19 pandemic, I am requesting that Congress provide funding of $100 million for the Drug Court Discretionary Grant Program and $30 million for the Veterans Treatment Court Grant Program at the Department of Justice for fiscal year 2022.

I am writing to you today as a treatment court graduate, father, and advocate for parents and children affected by substance use disorder. I am a 2008 graduate of the San Francisco Family Treatment Court—a program of the family civil court system that allowed me to remain a father while connecting me with the support, treatment services, and parental coaching I needed to overcome a lifelong substance use disorder. Without the support of the court, my now 13-year-old daughter would be growing up in the child welfare system without her father. Instead, she is a healthy, thriving teenager preparing for her first year of high school with me by her side. The treatment court drastically changed the trajectory of both our lives.

Since 2011, I have worked for the Homeless Prenatal Program, an organization that serves, among other child welfare programs, the San Francisco Family Treatment Court. In that role, I witness firsthand the transformation and triumph families experience as parents overcome substance use disorders and are reunited with their children. But I'm also seeing the grips of twin crises on families coming to me for help: the substance use epidemic and the ongoing effects of COVID–19, including isolation and economic devastation. Treatment courts, such as adult drug courts, veterans treatment courts, family treatment courts, and others offer a public health and public safety response to these crises as they seek to enhance and expand to serve more individuals in their communities.

With overwhelming empirical evidence showing their effectiveness, it is easy to see that treatment court programs across the country merit continued funding. The Government Accountability Office finds the drug court model reduces crime by up to 58 percent. Further, the Multi-Site Adult Drug Court Evaluation conducted by the Department of Justice confirmed drug treatment courts significantly reduce both drug use and crime, as well as finding cost savings averaging $6,000 for every individual served. Additional benefits include improved employment, housing, financial stability, and reduced foster care placements. Veterans treatment courts, which expand on the drug court model to include veteran justice outreach specialists from the Department of Veterans Affairs, volunteer veteran mentors from the community, and a myriad of veteran-specific local, State, and Federal resources have proven equally effective. As our heroes in uniform continue to transition home, it is critical that we have interventions like veterans treatment court in place to ensure they have the treatment, structure, and support to transform the lives of those who will inevitably struggle.

Beyond the numbers, treatment court programs are making a difference in real families across the country, including mine. When my daughter was born in 2007, child welfare services prevented me from bringing her home from the hospital. At that time, I was in the midst of a decades-long battle with substance use. Childhood trauma led me to trying alcohol at age 12, using harder drugs by age 14, homelessness at age 16, and a lifelong struggle with depression and anxiety. Leaving the hospital empty-handed was the most painful moment of my life. It was then I knew I had to do what I could to earn the right to bring my daughter to the home she deserved. I knew I wanted to change—I just needed help.

I found that help in the San Francisco Family Treatment Court. Until I entered the program, my experience with the court system left me feeling silenced in my own battle to be healthy and regain custody of my daughter. In treatment court, I found hope for the first time, something I'd longed to feel for years. Suddenly, I became an active participant in a journey to finding my own health and safety so that I could guarantee the same for my daughter when we were reunited. The multidisciplinary team of the judge, child welfare officers, substance use treatment providers, and others were committed to ensuring I received the intensive outpatient treatment and other social services I needed to ensure my daughter could be reunited with a father free of substance use.

The services I received through this treatment court program allowed me to realize my life's greatest achievement: fatherhood. My daughter has never known the man sent away from the hospital that day in 2007, and it's because of the San Francisco Family Treatment Court.

I'm not alone in my success. Treatment courts have reunited thousands of families by connecting those with mental health and substance use disorders with treatment options best suited to them, including medication-assisted treatment when deemed appropriate by a medical provider. Together, the court team offers the tools to overcome addiction and past trauma to create meaningful, healthy relationships.

Continued support from the Drug Court Discretionary Grant Program at the Department of Justice ensures the nearly 4,000 treatment courts in the United States today provide critical services to reunite loving families. But we know there are many more who still need this opportunity. I strongly urge this committee to recommend funding of $100 million to the Drug Court Discretionary Grant Program and $30 million to the Veterans Treatment Court Grant Program in fiscal year 2022, so families like mine continue to receive lifesaving services.

PREPARED STATEMENT OF THE ENTOMOLOGICAL SOCIETY OF AMERICA

FISCAL YEAR 2022 APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION

The Entomological Society of America (ESA) respectfully submits this statement for the official record in support of funding for the National Science Foundation (NSF). ESA joins the research community by requesting a robust fiscal year 2022 appropriation of $10 billion for NSF, including strong support for the Directorate for Biological Sciences (BIO). Through activities within BIO, NSF advances the frontiers of knowledge about complex biological systems at multiple scales, from molecules and cells to organisms and ecosystems. In addition, the directorate contributes to the support of essential research resources, including biological collections and field stations. NSF BIO is also the Nation's primary funder of fundamental research on biodiversity, ecology, and environmental biology.

NSF is the only Federal agency that supports basic research across all scientific and engineering disciplines outside of the biomedical sciences. Each year, the foundation supports an estimated 300,000 researchers, scientific trainees, teachers, and students, primarily through competitive grants to approximately 2,000 colleges, universities, and other institutions in all 50 States. NSF also plays a critical role in training the next generation of scientists and engineers through programs like the NSF Research Traineeship, ensuring that the United States will remain globally competitive in the future.

NSF-sponsored research in entomology and other basic biological sciences, which is primarily supported through NSF BIO, provides the fundamental discoveries that advance knowledge and facilitate the development of new technologies and strategies for addressing societal challenges related to economic growth, national security, and human health. Because insects constitute two out of every three animal species, fundamental research on their biology has provided foundational insights across all areas of biology, including cell and molecular biology, genomics, physiology, ecology, behavior, and evolution. In turn, these insights have been applied toward meeting challenges in a wide range of fields, including conservation biology, habitat management, livestock production, and pest management.

Insects have long played an essential role as model organisms for understanding basic biological processes across all organisms, including people. Insects are often ideal for biological models in laboratory experiments because they are generally small and inexpensive to obtain, they complete development rapidly, and they can be maintained without the special facilities required for vertebrate animals.

The common fruit fly, *Drosophila melanogaster,* for example, has been the subject of NSF-funded research that has profoundly transformed the understanding of human health and development in countless ways. Equally important, the ability to dramatically reduce the cost of sequencing genomes has played a critical role in advancing science in the last two decades. In 2018, entomologists were able to complete one of the first genome sequences by a single lab for under $1,000 using the fruit fly.[1] This breakthrough not only expanded the accessibility of genome sequencing but also changed the way scientists understand the fruit fly itself as a model organism. Previously it was thought each fruit fly was essentially genetically identical. This study revealed there are significant differences in the sequences of many important genes, indicating that genome variation is much greater than previously believed. This will likely have tremendous medical value to patients, health care workers, and scientists.

One NSF BIO-supported project that illustrates the broad reach of basic entomological research is focused on insect genetics. With food demands rising across the world, there is a need for sustainable, alternative protein sources such as mass-reared insects. While there are various problems associated with commercial insect production, many of them can be addressed by studying and altering genomes to se-

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[1] Solares, Edwin A et al. "Rapid Low-Cost Assembly of the Drosophila melanogaster Reference Genome Using Low-Coverage, Long-Read Sequencing." G3 (Bethesda, Md.) vol. 8,[10] 3143–3154. 19 Jul. 2018, doi:10.1534/g3.118.200162

lect desirable life history traits.[2] In August 2020, scientists from Indiana University—Purdue University Indianapolis and Beta Hatch Inc. published a draft genome assembly for the yellow mealworm (*Tenebrio molitor*), a promising alternative source of protein for animal feed, and perhaps even human consumption. The NSF-funded work used a new sequencing technology that combines aspects of two sequencing methods to create longer DNA sequences with lower error rates.[3] This high-quality draft genome is now available for researchers and industry as a valuable tool for optimizing mass rearing of mealworms.[1]

In another example of focused on genetics, NSF-funded researchers at Tufts University discovered that two genes are allowing the European corn borer moth to adapt to climate change by enabling synchronization between their life cycle and seasonal environmental changes. The invasive European corn borer moth is unique in its apparent ability to perfectly time its life cycle with the seasons so that populations do not die off from unexpectedly long or short winters. Genetic analysis of moths from across a range of climates (longer summers and shorter winters in the south, shorter summers and longer winters in the north) in the United States revealed genetic variations in two genes (known as clock genes) which were associated with development and generation time. The results of this study suggest potential mechanisms with which species will be able to adapt to changes in climate that expose them to variable season lengths.

NSF BIO also supports the development of technologies that directly impact economic sectors that are highly dependent on entomology. NSF recently awarded funding for a Small Business Innovation Research (SBIR) Phase I project aimed at ensuring healthier honey bee populations through data analysis and modeling.[4] The project seeks to build newer and more robust algorithms capable of autonomously analyzing data generated by networked sensors placed in beehives. The information derived from the resultant data sets could then be used to develop models capable of predicting the infiltration of pests and disease in hives before it actually occurs. Ultimately, the successful commercialization of this technology could revolutionize an entire agricultural sector that has suffered significantly because of honey bee colony collapse.

The NSF Graduate Research Fellowship Program (GRFP), selects and supports science and engineering graduate students demonstrating the exceptional potential to succeed in science, technology, engineering, and mathematics (STEM) careers. For example, multiple recent Fellows have advanced the frontiers of knowledge about the biology of social insects under changing environmental conditions. GRFP-sponsored research investigating extreme phenotypic plasticity, wherein environmental rather than genetic inputs lead to differences among individuals, illuminated how developmental pathways may have been altered during the evolution of sociality to create social insect castes, such as queens and workers.[5] Phenotypic plasticity is a key mechanism of biological adaptation, and this scientific understanding is vital to predicting whether insects and other life may adjust to environmental change. The insights and tools derived from such activities will better enable land managers and environmental regulators to protect ecosystems vulnerable to climactic shifts.

In addition to funding research, NSF BIO plays a critical role in the curation, maintenance, and enhancement of physical-biological collections. These collections and their associated data sets serve a variety of purposes, and while they are particularly important to the field of entomology, their value to the broader scientific enterprise cannot be overstated. Physical collections enable the rapid identification and mitigation of costly invasive pests that affect agriculture, forestry, and human and animal health. This is only achievable because such collections are continuously being updated to reflect environmental changes, evolutionary developments, and shifting migratory patterns of invasive species around the world. For example, the GRFP supported a project which used natural history collections to examine how the diversity of beneficial social insects have changed with urbanization intensity over the past century.[6] Researchers then developed novel machine learning models to forecast how land use change will affect biodiversity patterns in the future. Ongoing investment in the training of the next generation of scientific leaders is essential to promoting the American workforce in STEM and advancing basic scientific dis-

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[2] https://www.wageningenacademic.com/doi/epdf/10.3920/jiff2019.0057

[3] https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=301188&org=BIO&from=news

[4] Symes, Ellie. SBIR Phase I: Data Analytics on Honeybee Hives Using IoT Sensor Data. Award Number: 1746862

[5] https://journals.biologists.com/jeb/article/221/23/jeb153163/20481/Genetic-accommodation-and-the-role-of-ancestral

[6] https://www.nsf.gov/awardsearch/showAward?AWD_ID=1906242&HistoricalAwards=false

covery in NSF priority areas. NSF also supports workshops designed to provide hands-on training in collections curation and management, with a particular emphasis on students and early-career researchers.[7]

While collections-focused awards like those mentioned above are encouraging, ESA is concerned by the inconsistent Federal support for biological collections. Recent advancements in imaging, digitization, and data collection and storage technologies have caused some to question the necessity of continued support for existing biological collections. ESA recognizes that technological development is spurring substantive discussion about the future of biological collections. However, while these new developments and advancements will hopefully yield new benefits for biological research, they are not a replacement for physical biological collections. Given their continuing relevance and broad application to domestic homeland security, public health, agriculture, food security, and environmental sustainability, ESA firmly supports continued Federal investment in programs supporting collections such as NSF's Infrastructure Capacity for Biological Research.

Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, ESA supports an overall fiscal year 2022 NSF budget of $10 billion. ESA requests robust support for the NSF BIO Directorate, which funds important research studies and biological collections, enabling discoveries in the entomological sciences to contribute to understanding environmental and evolutionary biology, physiological and developmental systems, and molecular and cellular mechanisms.

ESA, headquartered in Annapolis, Maryland, is the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines. As the largest and one of the oldest insect science organizations in the world, ESA has approximately 7,000 members affiliated with educational institutions, health agencies, private industry, and government. Members are researchers, teachers, extension service personnel, administrators, marketing representatives, research technicians, consultants, students, pest management professionals, and hobbyists.

Thank you for the opportunity to offer the Entomological Society of America's support for NSF research programs. For more information about the Entomological Society of America, please see http://www.entsoc.org/.

[This statement was submitted by Michelle S. Smith, BCE, President.]

PREPARED STATEMENT OF THE FEDERAL MANAGERS ASSOCIATION

UNITED STATES MARSHALS SERVICE

CHAPTER 373

June 3, 2021

The Honorable Patrick J. Leahy
Chairmen
Committee on Appropriations
437 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Richard C. Shelby
Ranking Member
Committee on Appropriations
304 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Jeanne Shaheen
Chairwoman
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
506 Hart Senate Office Building
Washington, D.C. 20510

The Honorable Jerry Moran
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
521 Dirksen Senate Office Building
Washington, D.C. 20510

FISCAL YEAR 2022 APPROPRIATIONS, U.S. MARSHALS SERVICE (USMS)

Dear Chairs Leahy and Shaheen and Ranking Members Shelby and Moran:

[7] Song, Hojun and Shockley, Floyd. Towards a Sustainable Management of Insect Collections in the U.S. through the Entomological Collections Management Workshop. Award Number: 1640919

The Federal Managers Association (FMA)[1] is the oldest and largest organization representing the interests of the 200,000 managers, supervisors, and executives serving in today's Federal Government. It aims to promote excellence in public service. Despite setbacks in consultation with USMS leadership in recent years,[2] FMA has maintained an active and influential chapter at the Agency for nearly two decades.

USMS FMA has long sounded the alarm about staffing levels at USMS.[3] The concerns in no way suggest that Congress has not appropriated an adequate number of full-time equivalencies (FTEs) to fulfill USMS duties.[4] Rather, they speak to how Agency leadership has disproportionately allocated its workforce into what has grown into top-heavy headquarter divisions and staff offices, versus its 94 district offices throughout the country where the majority of work assignments are carried out each day. An exhibit[5] in a recent news report[6] confirms that district offices continue to be neglected. As a result, we believe it is only a matter of time before the Agency is no longer able to safely and consistently carry out its primary mission of court security without risk of injury or worse to participants in the judicial process.

Agency executives routinely suggest an interest in one Marshals Service. Yet, we often hear from our constituents—and we agree—USMS has seemingly grown into two separate components operating under the same badge. Over the past decade the Agency has seen a significant increase in the splitting of its workforce between 94 district offices and 12 headquarter divisions and a variety of staff offices, the latter that report through Arlington, VA.

Rather compelling is—for what may be the first time—a written admission by the Agency's Chief of Staff in the aforementioned exhibit, presumably representing the Director and Deputy Director,[7] that staffing shortages in district offices are adversely impacting the ability to provide basic judicial security functions:

> *"The USMS takes seriously its court security responsibilities and place the highest priority on maintaining the safety and security of those involved in the judicial process. It should be noted, however, the Marshals Service is currently at a critical staffing level of 69 percent across the agency. The District of South Dakota's DUSM staffing level is even lower at only 65 percent. This severe staffing shortage contributes to the limited number of trials and hearings which can be supported simultaneously, as well as the staffing for any pre- or post-trial appearances requiring the provision of court security by DUSM personnel. Any widespread court orders or other restrictions which would impose additional limitations on the number of DUSMs available to provide court security and other vital responsibilities further degrades our Nationwide ability to support the judiciary and may negatively impact the ability of courts to conduct their business when such security is required."*[8]

Last year, the Courts called upon Congress for "increased appropriations for USMS to hire an additional 1,000 Deputy U.S. Marshals (DUSMs) in accordance with the District Staffing Model" to provide for their security.[9] Many Agency managers, however, make the case that these 1,000 "district" operational employees have been reassigned over time to build larger headquarter divisions and staff offices at the expense of district offices, routinely creating staffing shortages across the country to uphold the Agency's *primary* mission. For example:

—Today, the Agency's Investigative Operations Division employs over 600 FTEs and contractors throughout the country, all reporting through Arlington, VA, as

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[1] www.fedmanagers.org

[2] http://fedmanagers.org/fma/files/ccLibraryFiles/Filename/000000001510/FMA%20to%20Director%20Washington%20re%20%20Consultation%20Agreement.pdf, September 21, 2020

[3] https://www.govexec.com/management/2019/02/us-marshals-complain-system-unfairly-denies-them-promotion/154811/, February 12, 2019 (note sub-heading "HQ Versus the Field").

[4] https://www.usmarshals.gov/duties/factsheets/index.html, viewed June 3, 2021.

[5] https://drive.google.com/file/d/1qFXJktXtE2eH2lba5dqhlFUnTb__1gJQH/view, May 10, 2021.

[6] https://dakotafreepress.com/2021/05/31/u-s-marshals-face-contempt-for-disrupting-court-after-refusing-judges-order-to-disclose-coronavirus-vaccination-status/, May 31, 2021.

[7] Questions have been raised where the Agency's leadership is (i.e., why the Director and Deputy Director have delegated a response to an Article III Judge from the Chief of Staff with no decisional authority).

[8] *Id.*

[9] https://www.uscourts.gov/sites/default/files/letter__to__congress__re__judicial__security__funding__request.pdf, September 4, 2020, and https://www.uscourts.gov/news/2020/09/09/congress-urged-adopt-judicial-security-measures, September 9, 2020.

opposed to the district chain of command (*i.e.,* United States Marshal and Chief Deputy U.S. Marshal) in cities where the two groups are mere miles apart from one another.

—During the previous Administration, the Agency dedicated nearly two dozen DUSMs to its Judicial Security Division (JSD) in support of protective operations for the Secretary of Education.[10] Its cost was widely criticized for years and many questions were raised on how and why it became a new USMS mission.[11] The detail ended on January 8, 2021. Yet, it does not appear the assigned DUSMs, most of whom were originally pulled from districts years earlier, were returned to the most critically understaffed offices. Instead, we are informed almost all were reassigned to other headquarter programs, to include within JSD to increase the size of the protection detail for the Deputy Attorney General.

—Three dozen DUSMs and administrative employees (and one contractor) are reportedly assigned to the Tactical Operations Division, Strategic National Stockpile Security Operations. While guarding the country's national stockpile is an important responsibility, it is not one that necessarily falls within a primary USMS mission.

The Agency uses a District Staffing Model to allocate positions to its 94 district offices. Despite repeated requests over many years to develop a similar model, one does not exist for USMS headquarters, thereby allowing its offices to grow exponentially. Consequently, we do not believe transparency exists with respect to how the Agency strategically applies a staffing model exclusive to districts, thereby positioning itself when levels drop, to argue for additional funding to protect judges. Rather, it gives the impression Congress can only solve a crisis in the making with more resources.

Before funding an additional 1,000 DUSMs, we urge the sub-committee to consider examining the true need of so many additional positions at taxpayer expense. After all, the Agency reports year after year it has been unable to fill a number of DUSM openings, consistently incapable of keeping up with attrition. A review of existing vacancies—even well before the pandemic—will likely validate this point.[12]

Across the country in other DOJ investigative components (*i.e.,* ATF, DEA, FBI, and OIG) operational staff assigned in cities outside their Washington, D.C. headquarters report through a local Special Agent-in-Charge. Not so at USMS where hundreds of DUSMs report through Arlington, VA, creating unnecessary and redundant layers of mid-level managers in the same cities to separately supervise those assigned to headquarter divisions and staff offices and those assigned to districts.

A co-author of this letter managed USMS, Northern District of Illinois, for more than 2 years from 2018–2020. His experience was those headquarter employees assigned in Chicago were not routinely available or required to support district operations, even on what were "beyond-capacity days" when staffing was so critically short the district had difficulty safely carrying out the Agency's judicial security and detention operation missions (*i.e.,* when called to assist, headquarter employees under separate chains of command often did not show up at the U.S. Courthouse—without consequence—to support judicial security operations). When confronted with the associated risk, the Agency's Director said he believes USMS is "different" than ATF, DEA, FBI, and OIG. We think not. Accordingly, we call upon Congress to consider urging the Government Accountability Office to conduct a study to examine any difference in organizational structures, the associated risk, and unnecessary cost with redundant mid-level managers between other investigative DOJ components and USMS where at the latter employees could instead be hired at lower grades to staff courtrooms and detention space in district offices.

The Agency's Chief Financial Officer acknowledges Congress appropriates funds and positions to USMS as a whole unit (i.e., it does not mandate where to internally allocate said funds or positions).[13] ATF, DEA, FBI, and OIG seemingly and effectively manage their organizational structures through local Special Agents-in-Charge. We believe USMS could equally do so through its United States Marshals

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[10] Archived organizational chart, Judicial Security Division, Protective Operations, Secretary of Education. [Exhibit A]

[11] Letter to Acting Attorney General Matthew G. Whitaker from Charles E. Grassley, Chairman, Senate Committee on the Judiciary, December 7, 2018, [Exhibit B] and https://www.politico.com/news/2020/11/03/devos-security-detail-millions-years-433977, November 3, 2020.

[12] We also suggest asking for the number of DUSM candidates recruited, cleared, and currently ready to attend basic training if 1,000 positions were funded.

[13] Email from Holley O'Brien, Chief Financial Officer, to Jason Wojdylo, November 13, 2018. [Exhibit C]

and Chief Deputy U.S. Marshals that lead its district offices. Alternatively, divisions unnecessarily and exponentially grow silos, commonly termed throughout the Agency as "empire-building," disproportionately leaving too many districts critically short staffed. The current national average of 69 percent as reported by the Chief of Staff is astonishing, not ignoring an acknowledgement many districts operate at even lower staffing percentages.

We hope the new USMS Director will avoid being bamboozled by bureaucrats at USMS headquarters into believing congressional mandates require continued growth of headquarter divisions and staff offices. Instead, we renew our recommendation by urging him to shake-up the organizational structure by issuing an immediate moratorium on hiring all but critical vacancies exclusively in district offices and immediately reassign staff in cities around the country to local district chains of command, using the tested and successful model found at other DOJ components.

The Director-nominee awaits Senate confirmation. With his swift confirmation there is opportunity to get back to the basics by holding USMS accountable to its judicial security mission. Doing so could avoid the confrontation recently created in South Dakota between district managers—under of the auspice of "headquarters said so"—and the very judiciary the Agency is sworn to protect.[14] It raises questions whether additional research by USMS[15] may have advanced better communication with the Judiciary.

We urge Congress to expeditiously endorse five of the six judicial security measures approved by the Judicial Conference of the United States.[16] We ask that the staffing proposal, however, be carefully reviewed where immediate steps can instead be taken to reassign existing USMS operational employees from bloated headquarter divisions and staff offices back to critically understaffed districts.[17] Otherwise, beyond the more important issue of safety at our U.S. Courthouses and of the judicial process we question whether the greatest opportunity for excellence in public service can truly be achieved at USMS.

Sincerely,

Dave Barnes	Jason R. Wojdylo
President	Vice-President for Law Enforcement Operations

PREPARED STATEMENT OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

NSF FISCAL YEAR 2022 FUNDING

SUMMARY

Federal investments in fundamental research have led to remarkable progress in the biological and biomedical sciences. Basic research was the groundwork for the speed—months instead of years—in the development of COVID–19 vaccines, and pre-clinical research, such as animal studies, has been essential to every step of achieving medical progress.

Despite Congress' bipartisan support for investing in science, Federal funding for research has not kept pace, posing a threat to our Nation's competitiveness. We face a real threat of losing our edge in industries such as biotechnology if we do not prioritize increasing investments in science and building a diverse workforce.[1] The U.S. spends less on research and development (R&D) than many countries. If the U.S. is to be prepared to respond to future threats, our scientific leadership must progress. According to Science Is Us, there is the added benefit of jobs. STEM sup-

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[14] *Id.*

[15] https://www.washingtonpost.com/lifestyle/wellness/hipaa-vaccine-covid-privacy-violation/2021/05/22/f5f145ec-b9ad-11eb-a6b1–81296da0339b__story.html, May 22, 2021.

[16] https://www.uscourts.gov/sites/default/files/letters__to__congressional__leadership__re__judicial__security__0.pdf, August 19, 2020.

[17] For the past 15 months hundreds of USMS employees and contractors assigned to headquarter divisions and staff offices have predominantly teleworked amid the pandemic. Conversely, their peers assigned to districts mostly reported to district offices to carry out the Agency's critical missions.

[1] NSF Science Indicators 2018

ports 69 percent of U.S. gross domestic product, touches two out of three workers, and generates $2.3 trillion in tax revenue.[2]

The Federal Government should commit to robust, predictable, and sustained funding increases for science agencies.

NATIONAL SCIENCE FOUNDATION

With a mandate to support fundamental research across all fields of science, engineering, and mathematics, the NSF is the cornerstone of our Nation's scientific and innovation enterprise.

Among Federal science agencies, NSF has the unique capacity to:

Support multi-disciplinary research: By leveraging its portfolio across the sciences, NSF funds cutting-edge research at the interface of the physical, biological, and social sciences to tackle challenges in creative ways, including climate change, biodiversity loss, and geohealth.[3]

Organize and lead research partnerships at speed and scale: The NSF coordinates and leads interagency research endeavors, including partnerships with NIH and DOE SC. These collaborations advance public health and clean energy, the development of artificial intelligence, and other national priorities.[4]

Train the next generation of scientists: NSF plays a key role in supporting accessibility of scientific education, training scientists who will work across different scientific disciplines, and broadening participation in science and engineering among underrepresented and diverse groups.[5]

Despite its critical role in accelerating science and innovation, NSF's budget has not grown in real terms in nearly 20 years. Recent data demonstrates that NSF was able to fund only 22 percent of the high-quality research proposals that were submitted, rather than the National Science Board recommendation of 30 percent. In fiscal year 2019, approximately $2.8 billion was requested for about 4,262 declined proposals that were rated Very Good or higher in the merit review process.[6]

Our recommendation ($10 billion) is $1.5 billion above fiscal year 2021 to support a five percent increase across the agency's core research and education programs, establish a new grant program for early-career fellowships as envisioned in congressional legislation, fund more high-quality research proposals, and increase NSF's average award size.[7,8] NSF could also accelerate key priorities, including Ten Big Ideas, Convergence Accelerators, Partnerships for Innovation, I-Corp, and Mid-Scale Research Infrastructure.[9,10]

FASEB Fiscal Year 2022 Recommendation: At least $10 billion for NSF.

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[2] STEM and the American Workforce. You've heard it before: STEM jobs—... | by Science is US | Medium

[3] NSF's 10 Big Ideas, National Science Foundation, Alexandria, VA

[4] NSF Collaborations with Federal Agencies and Others, National Science Foundation, Alexandria, VA

[5] Education and Human Resources Directorate, National Science Foundation, Alexandria, VA

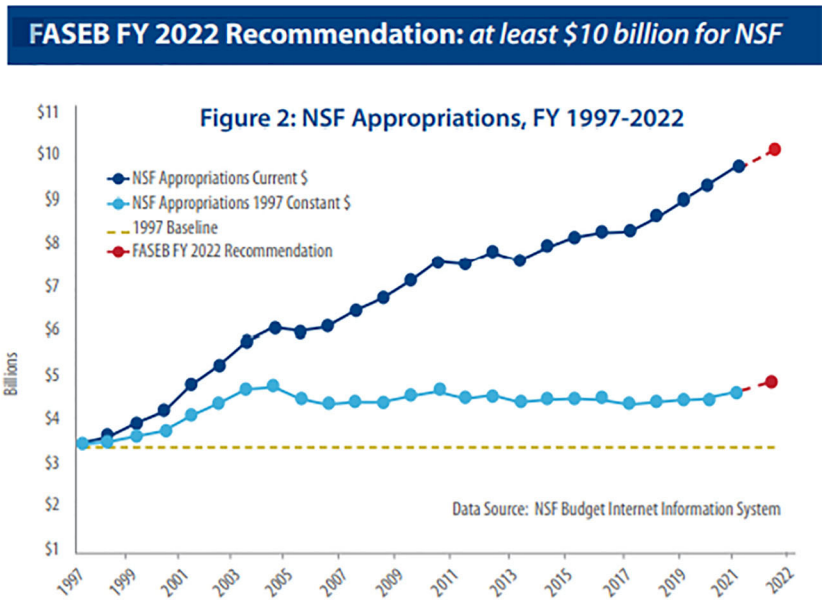
[6] Report on the National Science Foundation's Merit Review Process, Fiscal Year 2019, National Science Foundation, Alexandria, VA

[7] American Innovation Act

[8] Supporting Early Career Researchers Act

[9] National Science Foundation Convergence Accelerators and NSF 10 Big Ideas Funding, Fiscal Year 2020 Budget Request to Congress, National Science Foundation, Alexandria, VA

[10] Partnership for Innovation



[This statement was submitted by Ellen Kuo, Associate Director, Legislative Affairs.]

Prepared Statement of the Federation of Associations in Behavioral and Brain Sciences

Fiscal Year 2022 Appropriations for the National Science Foundation

Chairwoman Shaheen, Ranking Member Moran, and Members of the subcommittee:

The Federation of Associations in Behavioral and Brain Sciences (FABBS) is grateful for the opportunity to submit testimony for the record in support of the National Science Foundation (NSF) budget for fiscal year 2022. FABBS represents 27 scientific societies and over sixty university departments whose members and faculty share a commitment to advancing knowledge of the mind, brain, and behavior. As a leading member of the Coalition for National Science Funding, *FABBS joins the broader scientific community in urging Congress to fund NSF with at least $10 billion in fiscal year 2022.*

FABBS is grateful for the strong bipartisan and bicameral support to re-invigorate Federal research and development at a time when our global competitors are looking to surpass American investments. The bipartisan United States Innovation and Competition Act recently passed by the Senate would authorize more than $80 billion for the Foundation over 5 years. This same commitment to growing NSF is reflected by Members of the House Science, Space, and Technology Committee in the bipartisan NSF for the Future Act recently passed out of committee, which would authorize $78 billion over 5 years. Furthermore, the President's budget request calls for over $10 billion in fiscal year 2022, a 20 percent increase over fiscal year 2021 appropriations.

This demonstration of support recognizes that NSF-funded research pays long-term dividends in health, national security, and the innovation and technologies driving our economy. In addition, NSF research and programs provide the tools to develop a workforce equipped for the challenges and technologies of the future and foster the next generation of scientists—with a commitment to broad participation—whose work will keep this country at the forefront of discovery. Furthermore, Federal support for the NSF is vital to our research infrastructure. NSF supports one out of every four basic research projects at higher learning institutions across the United States.

Despite the critical importance of NSF, and the fact that the U.S. has lost standing in international competitiveness, the agency remains woefully underfunded. Due to budget constraints, NSF must decline thousands of qualified proposals, of which nearly $3 Billion dollars' worth are rated very good or higher. NSF Director Panchanathan has indicated that proposals that do receive funding could produce better research outcomes and provide better value by increasing the size and duration of grants. In fact, he has said that NSF could double their budget on the current research and researchers that go unfunded, and "a quadrupling of the funding is just barely enough to be able to take us to all the ideas being unleashed so that we might be far ahead of the competition."

FABBS members are grateful that NSF received $75 million in the CARES Act and $600 million in the American Rescue Plan. These appropriations have already led to important insights related to the COVID–19 pandemic, while helping to alleviate the research interruptions caused by the public health crisis and fund timely research critical to helping our country slow the spread of COVID–19. NSF has made more than 1,000 awards to address questions related to the pandemic and its long-term consequences.

Behavioral, cognitive, and social scientists are producing tools for policymakers, educators, and the general public to cope with and recover from the unprecedented circumstances of the past year. They are developing strategies to get students back on track, delineating best practices for public health communication, and advancing knowledge to foster resilience in the face of collective trauma and sustained periods of stress. Robust investment in basic science in fiscal year 2022 is vital to accelerating the pandemic recovery and maintaining American leadership in research and development.

FABBS scientists have a particular interest in the Social, Behavioral and Economics (SBE) Sciences directorate, which provides an estimated 62 percent of the Federal funding for fundamental research in SBE sciences at academic institutions across the country.[1] Thus, our fields are heavily dependent on the NSF to inform discoveries from expanding our understanding of the mechanisms of memory underlying brain activity, to contributing to the design and assessing the social and ethical consequences of new technologies, to better understanding decision making and risk assessment with broad implications for health and public policy. SBE is home to the National Center for Science and Engineering Statistics (NCSES), a Federal statistical agency that provides statistical information about the United States' science and engineering (S&E) enterprise. NCSES collects, analyzes, and disseminates data on research and development (R&D), the S&E workforce, the condition and progress of science, STEM education, and U.S. competitiveness in science, engineering, and technology R&D.

In addition to receiving support from SBE, FABBS members appreciate critical funding from the Computer and Information Science and Engineering Directorate (CISE), which funds research on topics such as human-technology interaction and cyber-assisted learning; the Biological Sciences (BIO) Directorate, which funds research on topics such as sleep and circadian rhythms and sex differences in responses to stress; and the Education and Human Resources (EHR) Directorate, which funds research on increasing America's human capital through effective education in science, technology, engineering and mathematics.

We recognize that Congress must balance competing budget priorities while working to deliver a robust recovery from the pandemic. To that end, increasing Federal investment in fundamental scientific research across all sciences is critical to successfully managing the pandemic recovery and ensuring the future prosperity, security, and health of our Nation and its people. *We urge you to provide NSF with at least $10 billion for fiscal year 2022.* Along with the broader scientific community, we believe that increased funding for fundamental scientific research would set the NSF on a path to yield transformative benefits to the country. We thank you in advance for your commitment to robust funding in fiscal year 2022 and efforts to complete the budget in a timely manner.

Thank you for considering this request.

FABBS MEMBER SOCIETIES

Academy of Behavioral Medicine Research
American Educational Research Association
American Psychological Association
American Psychosomatic Society
Association for Applied Psychophysiology and Biofeedback

[1] https://www.nsf.gov/about/budget/fy2021/pdf/28__fy2021.pdf

Association for Behavior Analysis International
Behavior Genetics Association
Cognitive Neuroscience Society
Cognitive Science Society
International Congress of Infant Studies
International Society for Developmental Psychobiology
Massachusetts Neuropsychological Society
National Academy of Neuropsychology
The Psychonomic Society
Society for Behavioral Neuroendocrinology
Society for Computation in Psychology
Society for Judgement and Decision Making
Society for Mathematical Psychology
Society for Psychophysiological Research
Society for the Psychological Study of Social Issues
Society for Research in Child Development
Society for Research in Psychopathology
Society for the Scientific Study of Reading
Society for Text & Discourse
Society of Experimental Social Psychology
Society of Multivariate Experimental Psychology
Vision Sciences Society

FABBS AFFILIATES

APA Division 1: The Society for General Psychology
APA Division 3: Experimental Psychology
APA Division 7: Developmental Psychology
APA Division 28: Psychopharmacology and Substance Abuse
Arizona State University
Binghamton University
Boston University
California State University, Fullerton
Carnegie Mellon University
Columbia University
Cornell University
Duke University
East Tennessee State University
Florida International University
Florida State University
George Mason University
George Washington University
Georgetown University
Georgia Institute of Technology
Harvard University
Indiana University Bloomington
Indiana University—Purdue University Indianapolis
Johns Hopkins University
Kent State University
Lehigh University
Massachusetts Institute of Technology
Michigan State University
New York University
North Carolina State University
Northeastern University
Northwestern University
The Ohio State University, Center for Cognitive and Brain Sciences
Pennsylvania State University
Princeton University
Purdue University
Rice University
Southern Methodist University
Stanford University
Syracuse University
Temple University
Texas A&M University
Tulane University
University of Arizona
University of California, Berkeley
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, Riverside
University of California, San Diego
University of Chicago
University of Colorado, Boulder
University of Delaware
University of Houston
University of Illinois at Urbana-Champaign
University of Iowa
University of Maryland, College Park
University of Massachusetts Amherst
University of Michigan
University of Minnesota
University of Minnesota, Institute of Child Development
University of North Carolina at Greensboro
University of Pennsylvania
University of Pittsburgh
University of Texas at Austin
University of Texas at Dallas
University of Washington
Vanderbilt University
Virginia Tech
Wake Forest University
Washington University in St. Louis
Yale University

[This statement was submitted by Juliane Baron, Executive Director.]

PREPARED STATEMENT OF THE FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY

FISCAL YEAR 2022 PROGRAMMATIC ALLOCATIONS FOR EDUCATION PROGRAMS UNDER THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) AND NATIONAL SCIENCE FOUNDATION (NSF)

Chair Leahy, Chair Shaheen, Vice Chairman Shelby, Ranking Member Moran, and Members of the Commerce, Justice, Science, and Related Agencies subcommittee, thank you for the opportunity to submit public testimony on the Fiscal Year 2022 Commerce, Justice, Science, and Related Agencies Appropriations bill. Specifically, FAMU supports the President's fiscal year 2022 budget request for the National Oceanic and Atmospheric Administration's (NOAA) Education Partnership Program with Minority Serving Institutions (EPP/MSI) and the National Sea Grant College Program, as well as the National Science Foundation's Education and Human Resources education programs. These congressionally authorized Federal programs have a direct impact on FAMU, our students, our region and our Nation.

Florida A&M University, based in the State capitol of Tallahassee, Florida, was founded in 1887 with only 15 students and two instructors. Today, FAMU has grown to nearly 10,000 students and we are the highest ranked among public Historically Black Colleges and Universities (HBCU) according to the U.S. News and World Report National Public Universities. Our University offers 56 bachelor's degrees, 29 master's degrees, 12 doctoral degrees and three professional degrees. We are a leading land-grant research institution with an increased focus on science, technology, research, engineering, agriculture, and mathematics.

The Federal Government is a key partner and resource for FAMU. The Federal science agencies, in particular, support a wide range of the University's education, research and training programs. In turn, we produce highly-skilled graduates in critical disciplines and conduct cutting edge research benefitting the Federal Government as well as the Nation. FAMU strongly supports funding for two important education programs under the Department of Commerce National Oceanic and Atmospheric Administration (NOAA), as well as education programs under the National Science Foundation Directorate for Education & Human Resources (EHR).

NOAA EDUCATION PARTNERSHIP PROGRAM WITH MINORITY SERVING INSTITUTIONS (EPP/MSI)

FAMU is one of the four lead universities for the NOAA Education Partnership Program with Minority Serving Institutions (EPP/MSI) Cooperative Science Centers (CSCs), and as such we support the proposed increase for the program in the President's fiscal year 2022 budget. The goal of the EPP/MSI is to increase the number of students, particularly from underrepresented communities, who attend Minority Serving Institutions and graduate with degrees in science, technology, engineering and mathematics (STEM) relevant to NOAA's mission.

In August 2016 under the EPP/MSI program, NOAA awarded Cooperative Science Centers (CSCs) to four universities under 5-year cooperative agreements. This was the latest round of CSC awards since the program was first established in 2001. FAMU is the lead university for the Center for Coastal and Marine Ecosystems, one of the four CSCs. Our partners include Bethune Cookman University, California State University Monterey Bay, Jackson State University, Texas A&M University (Corpus Christi), and the University of Texas Rio Grande Valley. The annual appropriation supports FAMU, along with other lead Minority Serving Institutions, which partner with 24 additional U.S. colleges and universities as part of the CSC program. The faculty and students conduct research that further supports NOAA's mission.

In April 2021, FAMU hosted the first phase of the Tenth Biennial NOAA EPP/MSI Education and Science Forum. The focus of the Forum is expanding academic training in NOAA-mission STEM disciplines, through partnership activities as well as promoting career opportunities for STEM graduates in the public, private, and academic sectors.

Since 2001, NOAA EPP/MSI Cooperative Science Centers institutions have awarded post-secondary degrees to over 2,300 students in fields that support NOAA's mission. Over the same time period, these institutions awarded over half of the doctoral degrees that were earned by African Americans in both atmospheric science and marine science in the United States. The President's fiscal year 2022 budget for NOAA's Office of Education proposes a $3 million increase in funding for this critical program, which supports NOAA-related research, increases diversity of the STEM workforce and fosters American competitiveness in STEM fields. We urge the

subcommittee to support the President's budget proposal and provide increased funding for the NOAA EPP/MSI program.

NOAA NATIONAL SEA GRANT COLLEGE PROGRAM

FAMU also strongly supports the subcommittee allocating the President's fiscal year 2022 budget request of $115.7 million for NOAA's National Sea Grant College Program, which works to create and maintain a healthy coastal environment and economy. The Sea Grant network consists of a Federal/university partnership between NOAA and 34 university-based programs in every coastal and Great Lakes State, Puerto Rico, and Guam. The network draws on the expertise of more than 3,000 scientists, engineers, public outreach experts, educators and students to help citizens better understand, conserve and utilize America's coastal resources.

The Florida Sea Grant program is a Statewide program headquartered at the University of Florida. The program supports research, education and extension to conserve coastal resources and enhance economic opportunities for the citizens of Florida. Since 1997, faculty and students at 13 participating institutions, including FAMU, have received Federal funding from the Florida Sea Grant. In 2019, the economic impact of the Florida Sea Grant program was $17.1 million and resulted in 372 jobs created or sustained. The program also supported a variety of research and training relevant to Florida's coastal communities and related industries, including developing a model to project future flood risks to support Florida's coastal resiliency plans. The program augments the State's artificial reef efforts and helps to protect, enhance and restore coastal habitat. Nationally, the Sea Grant program had an economic impact of $412.4 million in 2020, far exceeding the Federal investment in the program. The national program helped to create or sustain 10,404 jobs and 998 businesses. It also supported nearly 2,000 graduate and undergraduate students and fellows.

The President's fiscal year 2022 budget proposes to substantially increase funding for the National Sea Grant College Program under NOAA's Office of Oceanic and Atmospheric Research (OAR). Continued funding for this program, which has been in existence for more than 50 years, is critical to supporting Great Lakes and coastal communities, including those in Florida, through research, extension and education. FAMU, as a member of the Florida Sea Grant program, urges the subcommittee to support the President's budget proposal and fund the Sea Grant program at the requested level of $115.7 million.

NATIONAL SCIENCE FOUNDATION (NSF) EDUCATION PROGRAMS

The NSF Directorate for Education and Human Resources (EHR) supports a wide variety of programs across all levels of education in science, technology, engineering and mathematics (STEM). In particular, FAMU supports funding for the broadening participation programs aimed at increasing the participation of underrepresented populations in STEM education and, ultimately, the STEM workforce. These programs include the Historically Black Colleges and Universities Undergraduate Program (HBCU–UP). FAMU urges the subcommittee to support the President's budget request of $46.5 million for HBCU–UP.

FAMU has received significant research funding through NSF, including more than $4 million from NSF in fiscal year 2020. These grants have funded a variety of scientific research projects as well as programs to promote underrepresented minorities in STEM careers. FAMU continues to pursue NSF funding for innovative projects and encourages the subcommittee to provide robust funding for NSF's education programs.

The President's fiscal year 2022 budget requests $1.28 billion for NSF's EHR programs. The budget also proposes an increase in the HBCU–UP program. Funding at the President's budget request for EHR and the HBCU–UP would allow NSF to expand its important work of supporting STEM education programs, particularly its broadening participation programs directed at underrepresented populations.

We urge the subcommittee to support the President's proposed budget increases for these critical NOAA and NSF education programs. We thank you for your continued support of Federal postsecondary initiatives that not only directly benefit our University but the region and the Nation as well. Thank you for your consideration.

[This statement was submitted by President Larry Robinson, Ph.D.]

PREPARED STATEMENT OF FUTURES WITHOUT VIOLENCE

June 22, 2022

The Honorable Jeanne Shaheen,
Chairwoman
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

The Honorable Jerry Moran,
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

DEAR CHAIRWOMAN SHAHEEN AND RANKING MEMBER MORAN:

For more than 35 years, Futures Without Violence (FUTURES) has been providing groundbreaking programs, policies, and campaigns that empower individuals and organizations working to end violence against women and children around the world. Striving to reach new audiences and transform social norms, we train professionals such as doctors, nurses, judges, and athletic coaches on improving responses to violence and abuse. We also work with advocates, policymakers, and others to build sustainable community leadership and educate people everywhere about the importance of respect and healthy relationships.

—To create a future without violence, we support $2 million for VAWA's the National Resource Center on Workplace Responses (*Workplaces Respond*) in fiscal year 2022. This authorized program is currently funded at $1 million.

Futures Without Violence is a member of the National Campaign for Funding to End Domestic and Sexual Violence, an alliance of over 30 national organizations that support full funding for gender-based violence programs. Workplaces Respond is also supported by this coalition. On behalf of FUTURES, please allow us to provide some background on the Workplace Resource Center and the need for an increase to $2 million for this national program that supports economic security and safety for gender-based violence survivors.

Authorized by the Violence Against Women Act (VAWA) and funded through the U.S. Department of Justice's Office on Violence Against Women (OVW), the National Resource Center on Workplace Responses is the only national program focused on fostering survivors' economic security by promoting their safety and well-being on the job, and helping employers address how gender-based violence affects the workplace overall.

Economic security is a critical protective factor for survivors, so they have the resources necessary to seek safety, independence, and long-term stability for themselves and their children. The pandemic's disproportionate impact on women—especially women of color -has further eroded survivors' ability to achieve economic self-sufficiency. Women in the U.S. lost 5.5 million jobs in the first 10 months of the pandemic, nearly 1 million more job losses than men;

—60 percent of survivors reported job loss due to impacts of abuse; and
—Survivors are 5–6 times more likely to drop out of job training programs due to the impacts of abuse and lingering effects of trauma.

While we are entering the recovery stage of COVID, the fundamental need to support survivors, particularly women of color, remains, and the Workplace Resource Center has the effective results to meet this need. Since it was created, the Resource Center has conducted approximately 200 trainings and assisted nearly 20,000 people and countless workplaces. Workplaces Respond has helped ensure victim and workplace safety and productivity through:

—online-based resources;
—specialized education, training, and technical assistance for private and public workplaces, and other workplace stakeholders;
—awareness raising and outreach; and
—policies and practices to prevent and respond to violence impacting workers and the workplace.

In the past few years, since the start of the #MeToo movement and being inundated with requests, the Workplace Resource Center invested in creating a new online resource hub that provides guidance for employers, sample training curricula,

and tools and strategies for impacted employees. This was completed as funding remained level at $1 million.

For fiscal year 2022, we are requesting an increase in funding this year to $2 million through this VAWA program to carry out expanded and timely areas of work:

—*Trauma-Responsiveness:* In response to the devastating impact the COVID–19 pandemic has had on women's employment, the Workplace Resource Center seeks to engage employers through collaboration and capacity building to help reconnect survivors to employment. Building on strategies and tools our staff developed for trafficking victim service providers and local workforce development programs through a grant from DOJ's Office for Victims of Crime, we propose a new, but complementary initiative to ensure that survivors of domestic violence, dating violence, sexual violence, and stalking are better able to access job and skill-building programs, secure employment, and work within safe and trauma-responsive workplaces. This collaborative model was developed through 11 local victim service and employer collaborations across 10 cities and States.

—*Industry-specific Pilots:* In the past, the Workplace Resource Center has worked with local and regional-level hospitals, farm workers, and restaurants to support industry-specific best practices. We have started similar work with the fast food industry this past year, and an increase in funding could support a more robust demand for technical assistance and training to develop replicable practices.

—*Scale and Spread Strategy:* In order to replicate the model of employer engagement and foster local collaborations between victim services providers and employers, the Workplace Resource Center is in the process of instituting a Workplaces Respond Institute, which will bring representatives from 14 different localities to be trained on how to create a localized prevention and education model for employers, engage workplaces in better responding to violence impacting workers and the workplace, and support survivors in achieving economic stability.

—*Federal employees:* The public sector, which represents over 15 percent of the U.S. workforce, has always been under the Workplace Resource Center's umbrella. Recently, there is increasing interest from Federal agencies and OPM to re-engage in this work using the existing Presidential Memorandum—Establishing Policies for Addressing Domestic Violence in the Federal Workforce; increased appropriations would support this work.

For additional information, please contact Linda Seabrook, General Counsel and Director of Workplace Safety & Equity, lseabrook@futureswithoutviolence.org,, Kiersten Stewart, Director of Public Policy and Advocacy, at kstewart@futureswithoutviolence.org, or Sally Schaeffer, consultant, at sally@uncorkedadvocates.com.

[This statement was submitted by Esta Soler, President.]

PREPARED STATEMENT OF THE GEOLOGICAL SOCIETY OF AMERICA

NATIONAL SCIENCE FOUNDATION AND NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The Geological Society of America (GSA) supports strong and growing investments in geoscience research and education at the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA). We encourage Congress to appropriate $10 billion for NSF in fiscal year 2022 and increases to NASA's Science Mission Directorate and its Earth Science and Planetary Science Divisions. Investment in NSF and NASA is necessary to secure America's future economic leadership, both through the discoveries made and the talent developed through their programs. For the United States to remain a global leader, the Nation must provide greater investment in its people, particularly women and individuals from other groups traditionally underrepresented in STEM fields. Earth and space science at these two agencies play a vital role in American prosperity and security by playing an integral role in understanding and documenting mineral and energy resources that underpin economic growth; researching and monitoring potential natural hazards that threaten U.S. and international security; and determining and assessing water quality and availability.

The Geological Society of America (GSA) is a scientific society with members from academia, government, and industry in more than 100 countries. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind. GSA encourages co-

operative research among earth, life, planetary, and social scientists, fosters public dialogue on geoscience issues, and supports all levels of earth science education.

NATIONAL SCIENCE FOUNDATION

The Geological Society of America (GSA) appreciates the increase to the National Science Foundation (NSF) budget in fiscal year 2021 and thanks the Committee for recognizing the important role that the agency plays in our country's global competitiveness. We urge Congress to provide NSF at least $10 billion in fiscal year 2022.

Sustained increases beyond inflation are necessary to regain America's science and technology leadership and to enable the discoveries that lead to future innovations and industries. Data from the *Merit Review Process Fiscal Year 2019 Digest* show that NSF receives many more high-quality proposals than it can fund. In fiscal year 2019, NSF was only able to fund 27 percent of the proposals received. The report noted, "Approximately $2.8 billion was requested for declined proposals that were rated Very Good or higher in the merit review process—proposals that, if funded, may have produced substantial research and education benefits." The report States that National Science Board members "believe that the long-term health of the research community and promised benefits to the Nation demand a funding rate closer to the historical average of 30 percent or more." Increases in funding will allow NSF to continue to support its core basic research in addition to growing investments in its *Ten Big Ideas* and other transformational research. These big ideas are designed to position the U.S. on the cutting edge of global science and engineering leadership and will build upon and complement the basic research occurring in the directorates.

Geoscience research is a critical component of the overall science and technology enterprise and a key contributor to groundbreaking research across disciplines at NSF. NSF's Directorate for Geosciences is the largest Federal supporter of basic geoscience research at universities. Increased investments in NSF's geoscience portfolio are necessary to address such issues as natural hazards, energy and minerals, water resources, education, and needed research funding due to the coronavirus pandemic.

—There is a vital need to understand the abundance and distribution of critical mineral resources, as well as the geologic processes that form them, as articulated in the Energy Policy Act of 2020. NSF's Division of Earth Sciences supports research on the structure, composition, and evolution of the Earth and the processes that govern the formation and behavior of the Earth's materials. This research contributes to a better understanding of the natural distribution of mineral and energy resources.

—The quality and quantity of surface water and groundwater have a direct impact on the wellbeing of societies and ecosystems, as evidenced by flooding and drought impacts experienced across the U.S. during the past year. NSF's research addresses major gaps in our understanding of water availability, quality, and dynamics, including the impact of both a changing climate and human activity on the water system.

—The Division of Atmospheric and Geospace Sciences provides critical infrastructure and research funding for understanding our planet, including weather and precipitation variability and atmospheric and space weather hazards. NSF is a key partner in obtaining data necessary to predict severe space weather events, which affect the electric power grid, satellite communications, and navigation systems. The Promoting Research and Observations of Space Weather to Improve the Forecasting of Tomorrow Act (PROSWIFT Act), which was signed into law in October of 2020, highlights how NSF contributes to understanding these research questions.

—Understanding the oceans is key to a sustainable future. The National Research Council report *Sea Change: 2015–2025 Decadal Survey of Ocean Sciences* highlights areas of research that are need to make informed decisions, including: How can risk be better characterized and the ability to forecast geohazards like megaearthquakes, tsunamis, undersea landslides, and volcanic eruptions be improved? What are the rates, mechanisms, impacts, and geographic variability of sea level change? How different will marine food webs be at mid-century? In the next 100 years? Additional support for NSF would allow researchers to find answers to these essential questions.

—Natural hazards are a major cause of fatalities and economic losses. NOAA found in 2020 alone, there were 13 severe storms, seven tropical cyclones, one drought, and one wildfire that resulted in a cost of $95 billion and 262 deaths. An improved scientific understanding of hazards will reduce future losses by informing effective planning and mitigation. We urge Congress to support NSF investments in fundamental Earth science research and facilities that underpin

innovations in natural hazards monitoring and warning systems. For example, the Coastlines and People (CoPe) initiative aims to understand the impacts of coastal environmental variability and natural hazards on populated coastal regions.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

GSA requests increases to NASA's Science Mission Directorate (SMD) and its Earth Science and Planetary Science Divisions. Increased funding will be critical to implement the recommendations of the recent National Academy of Sciences' *Earth Science and Applications from Space (ESAS) Decadal Survey* report. The report notes,

"Earth science and applications are a key part of the Nation's information infrastructure, warranting a U.S. program of Earth observations from space that is robust, resilient, and appropriately balanced."

The data and observations from Earth observing missions and research are a tremendously important resource for natural resource exploration and land use planning, as well as assessing water resources, natural disaster impacts, and global agriculture production. GSA supports interagency efforts to ensure the future viability of Landsat satellites as well as funding to increase the capabilities and uses of multi-spacecraft constellations of small scientific satellites.

We appreciate congressional support in fiscal year 2021 for Earth Science Missions, and request that Congress continue their funding in fiscal year 2022. These missions will advance science frontiers and provide critical data for society. For example, NASA's Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission will help monitor the duration and impact of harmful algae blooms and The Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder will enable industry and military decision-makers to more accurately assess natural hazards, such as flooding.

By looking at our planet as an integrated system, NASA's Earth and climate science efforts are among the Nation's most effective tools to understand and tackle climate change. Planetary research is directly linked to Earth science research and cuts in either program will hinder the other. To support missions to better understand the workings of the entire solar system, planetary scientists engage in both terrestrial field studies and Earth observation to examine geologic features and processes that are common on other planets, such as impact structures, volcanic constructs, tectonic structures, and glacial and fluvial deposits and landforms. In addition, geochemical planetary research studies include investigations of extraterrestrial materials now on Earth, including lunar samples, meteorites, cosmic dust particles, and, most recently, particles returned from comets and asteroids. We appreciate past congressional support for this area and urge you to continue to increase this important area to support priority areas identified in the *Planetary Science Decadal Survey.*

SUPPORT NEEDED TO EDUCATE FUTURE INNOVATORS

Earth scientists will be essential to meeting the environmental and resource challenges of the twenty-first century, but a shortage is expected in the future workforce. The *Status of the Geoscience Workforce Report 2018* found an expected deficit of approximately 118,000 geoscientists by 2026. It also highlighted the diversity of careers supported by geoscience research. For example, the report found that the majority of master's degree graduates found jobs in the oil and gas industry and government, while environmental services, such as environmental consulting and remediation of water and soil, hired the highest percentage of geoscience bachelor's degree graduates. Other industries hiring geoscientists include manufacturing, trade, construction, information technology services, mining, and agriculture. Increased NSF and NASA investments in Earth science education are necessary to meet these workforce needs and develop an informed, science-literate population.

For the United States to remain a global leader, the Nation must provide greater investment in its people, including women and individuals from other groups traditionally underrepresented in STEM fields. NSF's Education and Human Resources Directorate researches and improves the way we teach science and provides research and fellowship opportunities for students to encourage them to continue in the sciences. Similarly, NASA's educational programs, led by NASA's Office of STEM Engagement and directorates, have inspired and led many into science careers. GSA fully supports these efforts, as well as additional programs to make the geoscience workforce more diverse, such as NSF INCLUDES—Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science.

Please contact GSA Director for Geoscience Policy Kasey White to learn more about the Geological Society of America—including GSA Position Statements on water resources, planetary research, energy and mineral resources, natural hazards, climate change, and public investment in Earth science research.

[This statement was submitted by Kasey White, Director for Geoscience Policy.]

PREPARED STATEMENT OF THE HUMAN FACTORS AND ERGONOMICS SOCIETY

FISCAL YEAR 2022 FUNDING FOR THE NATIONAL SCIENCE FOUNDATION

On behalf of the Human Factors and Ergonomics Society (HFES), we are pleased to provide this written testimony to House Appropriations subcommittee on Commerce, Justice, and Science, and Related Agencies for the official record. HFES urges the subcommittee to provide at least $10 billion for the National Science Foundation (NSF) in the fiscal year 2022 appropriations process. In addition, HFES supports efforts by NSF to broaden participation in science for underrepresented groups to ensure a diverse, equitable, and inclusive workforce and research enterprise, such as the INCLUDES and ADVANCE initiatives. These efforts are critical to not only fixing inequities in the U.S. research enterprise but also to ensuring that the U.S. has the robust, 21st Century workforce needed to maintain its competitive edge in technological innovation.

HFES is a multidisciplinary professional association with over 3,000 individual members worldwide, comprised of scientists and practitioners, all with a common interest in enhancing the performance, effectiveness, and safety of systems with which humans interact through the design of those systems' user interfaces to optimally fit humans' physical and cognitive capabilities. The Society and its members strongly believe that investment in scientific research serves as an important driver for innovation and the economy, national security, and maintaining American global competitiveness. Funding for fundamental research at NSF to address national and societal needs will be critical as Congress looks at legislation to ensure the U.S. remains the global leader in advancing science and technology. We thank the subcommittee for its longtime recognition of the value of scientific and engineering research and its contribution to innovation in the U.S.

HUMAN FACTORS AND ERGONOMICS AT THE NATIONAL SCIENCE FOUNDATION

HFES and its members strongly believe that Federal investment in NSF will have a direct and positive impact on the U.S. economy, national security, and the health and well-being of Americans. It is for these reasons that HFES supports robust funding for the Foundation to encourage further advancements in the fields of technology, education, defense, and healthcare, among others. In the past, NSF funding for HF/E basic research has strengthened interdisciplinary partnerships allowing for a multilateral approach to technology research and development, including the human and user perspectives. The benefits of this research are not confined to one field but rather span across a range of disciplines to increase understanding of the way humans interact with technology, as well as with each other.

In particular, NSF funds HF/E research to:

—Better understand and improve the effectiveness of how individuals, groups, organizations, and society make decisions.[1]
—Improve understanding of the relationship between science and engineering, technology, and society, in order to advance the adoption and use of technology.[2]
—Gain a better understanding of how humans and computers interact to ensure the development of new devices or environments that empower the user.[3]
—Inform decision making in engineering design, control, and optimization to improve individual engineering components and entire systems.[4]

HF/E research will be especially critical as Congress and the Federal Government work to develop, adopt, and broadly integrate emerging technologies such as artificial intelligence (AI). HFES recognizes that most systems that rely on AI will not

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[1] Decision, Risk & Management Sciences (DRMS) Program (http://www.nsf.gov/funding/pgm__summ.jsp?pims__id=5423)
[2] Science and Technology Studies (STS) Program (https://www.nsf.gov/funding/pgm__summ.jsp?pims__id=505697)
[3] Human Centered Computing (HCC) Program (https://www.nsf.gov/funding/pgm__summ.jsp?pims__id=504958)
[4] Operation and Design Cluster (http://www.nsf.gov/funding/pgm__summ.jsp?pims__id=13473)

operate independently but will be initially programmed and trained by humans to augment, collaborate, or perform specific tasks.

The HF/E profession has conducted detailed research on impacts of AI on human performance, and HFES believes AI must be designed to successfully support human capabilities and overcome known human cognitive limitations, so that humans can understand the actions and intentions of AI. More research is needed to understand how systems can be designed to overcome AI biases, provide transparency and explainability for human use, and provide clear interfaces for human-AI interactions. Interdisciplinary research programs at NSF to address these challenges, such as its Fairness in Artificial Intelligence program [5] and the AI Research Institutes,[6] will be critical to ensuring the U.S. achieves the promised benefits AI can bring to society.

THE VALUE OF HUMAN FACTORS AND ERGONOMICS SCIENCE

For over 50 years, the U.S. Federal Government has funded scientists and engineers to explore and better understand the relationship between humans, technology, and the environment. Originally stemming from urgent needs to improve the performance of humans using complex systems such as aircraft during World War II, the field of human factors and ergonomics (HF/E) works to develop safe, effective, and practical human use of technology. HF/E does this by developing scientific approaches for understanding this complex interface, also known as "human-systems integration." Today, HF/E is applied to fields as diverse as transportation, architecture, environmental design, consumer products, electronics and computers, energy systems, medical devices, manufacturing, office automation, organizational design and management, aging, farming, health, sports and recreation, oil field operations, mining, forensics, and education.

With increasing reliance by Federal agencies and the private sector on technology-aided decision-making, HF/E is vital to effectively achieving our National objectives. While a large proportion of HF/E research exists at the intersection of science and practice—that is, HF/E is often viewed more at the "applied" end of the science continuum—the field also contributes to advancing "fundamental" scientific understanding of the interface between human decision-making, engineering, design, technology, and the world around us through research funded by NSF. The reach of HF/E is profound, touching nearly all aspects of human life from the health care sector to the ways we travel, to the hand-held devices we use every day.

CONCLUSION

Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, HFES supports an overall fiscal year 2022 NSF budget of at least $10 billion. This investment funds important research studies, enabling an evidence-base, methodology, and measurements for improving organizational function, performance, and design across sectors and disciplines.

On behalf of HFES, we would like to thank you for the opportunity to provide this testimony. Please do not hesitate to contact us should you have any questions about HFES or HF/E research. HFES truly appreciates the subcommittee's long history of support for scientific research and innovation.

[This statement was submitted by Peter Hancock, DSc, PhD, President, and Steven C. Kemp, CAE, Executive Director.]

PREPARED STATEMENT OF THE JAMESTOWN S'KLALLAM TRIBE

DEPARTMENTS OF JUSTICE AND COMMERCE

On behalf of the Jamestown S'Klallam Tribe, I am pleased to submit this written testimony on our funding priorities and requests for the Fiscal Year 2022 for the Department of Commerce and the Department of Justice budgets. Our budget request endorses the requests and recommendations of our international, regional, and national partners, the Pacific Salmon Commission, the Northwest Indian Fisheries Commission, Affiliated Tribes of Northwest Indians, and the National Congress of American Indians.

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[5] NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI) (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505651)

[6] Artificial Intelligence Research Institutes (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505686)

The moral compass of our Nation is expressed annually when Congress exercises its authority to appropriate funding to support certain programs and services. The Constitution, Treaties, Executive Orders, and numerous court decisions established the legal and moral foundation for prioritizing funding for American Indians and Alaska Natives (AI/AN). Yet, as documented by two Reports that were issued by the U.S. Civil Rights Commission, a quiet crisis of unfulfilled Federal obligations has persisted for decades across Indian Country and has left our Tribal citizens and communities vulnerable to the current public health crisis and economic devastation. The COVID–19 pandemic's disproportionate impact on AI/AN resulted in the highest rates of infection, hospitalizations, and deaths compared to any other racial and ethnic group in the U.S. And these harrowing statistics are likely much worse given the lack of accurate, reliable, quality data on AI/AN.

The Biden Administration has committed to respect Tribal sovereignty, as well as, uphold the trust responsibility, strengthen the Nation-to-Nation relationship, and empower Tribal communities through Self-Governance and Self-Determination to make their own decisions and govern their own communities. We urge Congress to follow suit and pass a Federal budget for AI/AN that is reflective of the solemn promises made by the U.S. We have proven time and again that when you invest in Jamestown and empower our Tribe to exercise our inherent right of Self-Governance we become strong economic development drivers for our community and the surrounding region by growing our resource base and creating jobs. Tribes are a critical governmental partner in our Nation's quest to *"Build Back Better"*.

UPHOLD TRUST AND TREATY OBLIGATIONS

1. Provide Recurring Base Funding for Tribal Programs
2. Require All Agencies to Provide an Annual Estimate of the Costs to Fully Fund Tribal Programs & Improve Data Collection to Support Tribal Funding Requests
3. Provide Mandatory Funding for Tribal Programs and Services

TRIBAL REQUESTS AND RECOMMENDATIONS—DEPARTMENT OF COMMERCE *(Support the fiscal year 2022 request of the Pacific Salmon Commission)*

1. Provide $110 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS)
2. Provide $18.3 million for the Pacific Salmon Treaty, including the additional $5.5 million for the 2008 Chinook Salmon Agreement (NOAA/NMFS)
3. Provide $25.9 million for the Mitchell Act Hatchery Program (NOAA/NMFS)

NATIONAL REQUESTS AND RECOMMENDATIONS—DEPARTMENT OF JUSTICE

1. Fully Fund the Tribal Law and Order Act (TLOA)
2. Fully Fund Violence Against Women Act (VAWA)
3. Office of Justice Programs (OJP)—Create a Ten Percent (10 percent) Tribal Set-Aside for Tribes
4. Victims of Crime Act Funding—Provide a five percent (5 percent) set aside
5. Fund COPS Program—$52 million

UPHOLD TRUST & TREATY OBLIGATIONS

1. *Provide Recurring Base Funding for Tribal Programs*

Stable base funding at sufficient levels is essential for viable and effective Tribal programs and services. Grant funding is highly competitive, short-term, the application process is complex, the administrative burden on Tribes is excessive and there are numerous restrictions imposed on how Tribes may use the funds. Simply put, competitive grants create barriers to effectively and efficiently provide programs and services in Tribal communities. Reducing Administrative inefficiencies would improve program effectiveness and increase the ability of Tribes to leverage the Federal dollar. Base funding coupled with more flexibility allows for more effective and efficient use of the Federal dollar and stronger Tribal governmental systems resulting in resilient and self-reliant Tribal citizens and communities.

2. *Require All Agencies to Provide an Annual Estimate of the Costs to Fully Fund Tribal Programs & Improve Data Collection to Support Tribal Funding Requests*

It is incumbent upon the agencies, as trustees, to work collectively with the Tribes to quantify the true unmet need/unfulfilled Federal obligation with credible metrics that will demonstrate an accurate community profile for each Tribe. We need economic statistics and data that establish and drive policy goals, ensure effective implementation of programs and services, measure funding impacts, prove effective

and efficient use of funding, and to demonstrate program success. These data metrics, however, are not a "justification" of whether Tribes deserve funding. The Federal obligation does not dissipate if a Tribe performs poorly in any area. Rather, a heightened response by the government is required to identify the challenges that impede a Tribe's success and to build greater capacity at the local level, if necessary. At this point in time, there is not a system in place that captures the data needed. There is an absence of good data agency-wide with some agencies under the prior Administration having imposed a moratorium on the collection of needs-based data for Tribes. The Federal Government needs to be held accountable and directed to work in partnership with Tribes to collect data that quantifies the true unmet needs/unfulfilled Federal obligations in Indian country.

3. *Provide Mandatory Funding for Tribal Programs and Services*

Trust and Treaty obligations are not discretionary; these are mandatory responsibilities and obligations. On an annual basis Tribes are required to "justify" their budgetary needs and prove to the Federal Government that the Federal investment in Tribal communities is a good investment. We have shown time and again that the Federal investment in Jamestown is a good investment but the narrative about funding needs to be re-written because it is mischaracterizing the Federal trust obligation. Tribes relinquished their lands and resources in exchange for funding and services from the Federal Government in perpetuity and that obligation has not changed with time. It is solidified in our Constitution, Treaties, Executive Orders, and countless legal opinions.

DEPARTMENT OF COMMERCE TRIBAL REQUESTS AND RECOMMENDATIONS

1. *$110 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS)*

The Pacific Coastal Salmon Recovery fund was established to reverse the decline of salmon and steelhead in the Pacific Northwest. Jamestown uses the funds to restore wild salmon populations and to protect and restore important habitat in the Puget Sound coastal plains. These funds also support our policy development and help to build the technical capacity of our Natural Resources staff charged with planning, implementation, and monitoring recovery activities.

2. *$43.5 million for the Pacific Salmon Treaty—The U.S. Section estimates that this funding is needed to implement national commitments created by the Treaty (NOAA/NMFS)*

Since 1985, the Pacific Salmon Treaty, between Canada and the United States, has provided the framework for international collaboration and cooperation to conserve and manage Pacific Salmon. The Pacific Salmon Commission (PSC), Parties to the Treaty, works to establish fishery regimes, develop management recommendations, assess each country's performance and compliance with the Treaty, and is the forum for all entities to work towards reaching an agreement on mutual fisheries issues. In 2019, the Parties implemented a new 10-year agreement for these fisheries through 2028 and it is essential for the U.S. to uphold its commitment each year.

3. *$25.9 million for the Mitchell Act Hatchery Program (NOAA/NMFS)*

Jamestown hatchery operations have elevated our success and generated a substantial return on our investment in our aquaculture business. The Tribe operates three hatcheries, two in Washington State and one in Hawaii that produce shellfish and sablefish seeds. The seedlings help to replenish fish and shellfish stocks that have been depleted due to loss of ecosystems and natural habitats. Tribes depend on hatcheries to support Treaty fishing rights, protect our culture and traditional ways of life, and to bolster our commercial fishery operations at home and trade abroad.

NATIONAL REQUESTS AND RECOMMENDATIONS DEPARTMENT OF JUSTICE

1. *Fully Fund the Tribal Law and Order Act (TLOA)*

The Tribal Law and Order Act (TLOA) was an important step in empowering Tribes to better address the unique public safety challenges and reduce the prevalence of violent crime in Indian country. However, effective implementation of TLOA is contingent upon adequate Federal funding for law enforcement, courts, detention facilities and the provision of rehabilitative and preventative services. Full funding is needed to effectively and efficiently implement the comprehensive and improved measures that were enacted to address the public safety crisis in Tribal communities.

2. *Fully Fund Violence Against Women Act (VAWA) Including $5 million for VAWA Special Domestic Violence Criminal Jurisdiction*

The Office on Violence Against Women provides funding for Tribes to address violence against women in their communities. The incidence of domestic violence in Tribal communities is staggering and it is estimated that over 85 percent of AI/AN will be victims of intimate partner violence, stalking and/or sexual violence in their lifetime. Over 90 percent of these crimes are committed by non-Natives who were outside of the jurisdictional authority of the Tribes. In 2013, Congress afforded AI/AN judicial recourse by reaffirming the inherent sovereign authority of Tribes to exercise Special Domestic Violence Criminal Jurisdiction over Indians and Non-Indians who commit certain crimes in Indian country. Although Congress authorized $5 million for Tribes to exercise this new jurisdictional authority, in fiscal year 2021 only $4.3 million was appropriated. Tribal justice systems need additional resources to fully implement this authority and we therefore urge Congress to appropriate $5 million.

3. *Office of Justice Programs (OJP)—Create a 10 percent Tribal Set-Aside for all (OJP) Programs and Allow for Greater Flexibility*

Jamestown is advocating for a 10 percent Tribal set-aside from all OJP discretionary programs to provide Tribes base funding and maximum flexibility including the ability to combine DOJ funding with other sources of funding and allow Tribes to develop comprehensive holistic strategies to address public safety and justice in their communities. Stable funding for Tribal public safety and justice is a prerequisite to ensure a safe, healthy, and thriving Tribal community.

4. *Provide a Five Percent (5 percent) Tribal Set-Aside for Victims of Crime Act Funding*

The Victims of Crime Act funding is financed by fines and penalties imposed on convicted Federal offenders and is the largest source of Federal funding for crime victims. As of 2020, the fund balance was over $6 billion. Although the fund was established in 1984 and despite the staggering rates of violent crimes in Indian country, Tribes were not authorized as direct recipients of funding until recently. For the past 5 years, Congress has authorized and appropriated a portion of the fund directly to Tribal Nations. We urge Congress to continue to provide a 5 percent Tribal Set Aside on a recurring annual basis.

5. *Fund the COPS Program—$52 million*

The COPS Office provides funding to Tribes for law enforcement officers. Since the creation of the COPS program Tribes have hired more than 1700 law enforcement officers. COPS funding is also used for police training, equipment, vehicles, and technology. Although there is a great need for additional law enforcement officers throughout Indian Country, limited resources have hindered Tribe's ability to hire, retain, and train law enforcement officers. It is imperative for the safety of Tribal citizens, Indian communities, and surrounding neighboring communities that a significant increase in funding is allocated for Tribal law enforcement officers and programs.

We thank you for the opportunity to provide this written testimony.

[This statement was submitted by W. Ron Allen, Tribal Chairman/CEO.]

PREPARED STATEMENT OF THE JOINT OCEAN COMMISSION INITIATIVE TO THE U.S. SENATE COMMITTEE ON APPROPRIATIONS, SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES

NOAA, NSF, AND NASA FOR FISCAL YEAR 2022

Chairman Shaheen, Ranking Member Moran, and other distinguished Members of the subcommittee on Commerce, Justice, Science, and Related Agencies, we thank you for the opportunity to submit written testimony regarding the Fiscal Year 2022 CJS appropriations bill.

The agencies under your charge must respond to the domestic and global crisis in our oceans. We urge you to ensure that all have sufficient resources to take necessary action. You have an opportunity to reassert global leadership that will steer the planet, including the stewardship of our oceans, back to a just, sustainable, and more secure future. We greatly appreciate your continued investment in our oceans commensurate with the immense value they provide our maritime Nation.

We are highly supportive of the Administration proposal for nearly $7 billion for NOAA, as well as significantly increased support for the National Science Founda-

tion and NASA's Earth Science Division. These represent significant steps to restoring U.S. technical capabilities and science as preeminent in the world. In certain critical accounts we ask you to consider modest additions above the president's request to address potentially catastrophic ocean conditions such as acidification and ensure that ocean observations are adequate to respond to accelerating climate impacts.

The Joint Ocean Commission Initiative (Joint Initiative) is a collaborative, bipartisan effort to catalyze action on meaningful ocean policy reform. We believe that protecting base funding and core programs at NOAA, NSF, and NASA is an investment that will save lives, protect national security, grow our economy, increase justice and equity, mitigate climate change, and preserve the health of our oceans, coasts, and communities. Ocean and coastal resources provide fundamental goods and services, including food, minerals, transportation, medicines, tourism, and recreational opportunities. They also provide livelihoods for millions of Americans, including historically underserved populations and those who are being most impacted by climate change. These coastal communities and economies have already been hit hard by the COVID–19 pandemic and need significant support to increase their resilience against future disasters.

Ocean and coastal environments are often the first line of defense in promoting resilience and protecting American communities from severe weather events. The oceans are disproportionately impacted by increasing emissions from human activities, but also have immense potential to mitigate the climate crisis, for example, by taking action to advance offshore renewable energy and reduce maritime emissions. With a clear nexus of climate and oceans, a failure to take decisive action would severely impact the health and livelihoods of millions of Americans, with the largest impact on historically underserved communities. The U.S. needs to lead when it comes to supporting climate research, education, and adaptation, as well as in centering justice and equity principles. Robust support for key accounts at NOAA, NSF, and NASA is essential to reestablish U.S. leadership.

The U.S. blue economy is paramount to ensuring an environmentally and economically sustainable future for our country. Contributing $373 billion annually to the Nation's GDP and supporting 2.3 million jobs, the blue economy creates significant economic impact. As sea levels rise and marine species leave their historic grounds, we risk losing these integral drivers of our coastal economy. The oceans are vital to green economic recovery from COVID–19 as well as protection of marginalized coastal communities who are disproportionately affected by climate change.

The Biden Administration's proposed topline budget makes significant strides toward re-establishing NOAA, NSF, and NASA Earth Sciences as premier science agencies that provide the underpinning to address the global climate crisis, while restoring and protecting the Nation's oceans. Based on the need for significant, sustained investment to invigorate public-private partnerships, address the significant ocean-climate nexus, and energize national, regional, State, and local initiatives, we strongly support increasing NOAA's overall budget to at least $6.9 billion as requested in the President's budget. We also urge the Committee to consider strategic investments above this level in critical accounts such as ocean acidification, managing fish stocks, and empowering oceans and coasts to mitigate climate impacts. Likewise, we support increasing NSF's overall budget to a minimum of $10.2 billion, and NASA Earth Science's budget to a minimum of $2.3 billion. We believe the recommendations in this testimony represent a modest investment relative to the threats and opportunities facing oceans and coastal communities, as the benefits they confer significantly outweigh the costs.

RESEARCH, EXPLORATION, AND OBSERVATION

A critical component of America's economic, military, and diplomatic power lies in its ocean research, education, exploration, and observation enterprises. Especially given the pace of observed changes in climate and ocean chemistry, we strongly urge the subcommittee to protect vital ocean science and research capabilities. To make the best, proactive management decisions possible, it is necessary that we first explore, map, observe, and understand our ocean.

Observation and monitoring programs are integral to NOAA's ability to accurately forecast weather, for NOAA's protection and management of America's ocean resources, and for the U.S. military's navigation and extreme weather preparedness. We ask that your committee continue to support enhanced capabilities for observation and monitoring by allocating $762 million to NOAA's Office of Oceanic and Atmospheric Research (OAR) and $66.7 million to NOAA's Sustained Ocean Observations and Monitoring Program. We also suggest the committee allocate $60 million

for the Ocean Exploration program to maintain the pace, scope, and efficiency of exploration.

It is also critical to fund climate research at OAR at no less than $293.7 million to promote high-priority climate science that advances our understanding of Earth's climate system. The oceans are vital to mitigating against and adapting to climate change; through this research we can understand and implement ocean-based risk management and adaptation opportunities.

In addition, we recommend allocating $10.2 billion for the NSF. NSF's investment in the geosciences—which includes ocean sciences—has spurred innovations, addressed salient national and global challenges, galvanized new economic sectors, generated countless jobs, and led to the development and implementation of advanced technologies. Finally, we recommend funding NASA's Earth Science Division at $2.3 billion, consistent with the President's request, to improve national capabilities to predict climate, weather, and natural hazards, and better manage resources.

EDUCATION AND EXTENSION

The National Sea Grant College Program works to better research, understand, conserve, and utilize America's coastal resources, making it critical to coastal States, communities, and economies. For example, Sea Grant programs support fisheries and aquaculture business development and help Americans plan for and respond to extreme weather events. Sea Grant programs engage the ocean workforce of the future and further equity through increasing access to ocean programs for underserved communities. Given Sea Grant's critical importance, we urge this committee to allocate $115.6 million to Sea Grant in fiscal year 2022, including $15 million for Sea Grant Marine Aquaculture.

NOAA's environmental education and ocean stewardship programs increase essential access to STEM education and cultivate environmental stewardship. We request that the committee provide $16.5 million for Bay-Watershed Education and Training (B–WET) programs and $8.8 million for Environmental Literacy Programs (ELP). These vital programs in increase equity through inspiring and educating future ocean leaders who represent all Americans.

RESILIENCE AND SECURITY

Sufficient funding must be dedicated to strengthening the resiliency of coastal communities and ocean ecosystems to combat dramatic, climate driven changes in our oceans. We ask this subcommittee to continue leading on ocean and coastal security by allocating $113 million for the National Ocean and Coastal Security Fund (NOCSF) in fiscal year 2022. We further recommend that at least $4.5 million be allocated for regional data portals used to support critical ocean partnerships that encourage collaboration and data sharing on the regional scale. In addition, we recommend a total allocation of $108.5 million to Coastal Management Grants and a minimum allocation of $42.5 million for the National Estuarine Research Reserve System in fiscal year 2022. These programs support vital Federal/State partnerships to help protect our coasts and preserve millions of acres of coastal habitat, buffering against rising seas and storm events.

NOAA's National Ocean Service (NOS) is also critical for sustained resilience and security. We strongly recommend that NOS receive an allocation of $884 million. NOS funding supports programs that ensure safe and efficient transportation and commerce; preparedness and risk reduction; and stewardship, recreation, and tourism. These programs protect our communities and safeguard our economic livelihoods. For example, NOAA's Office for Coastal Management delivers technical assistance communities need to address storm preparedness, erosion, development, habitat loss, sea level rise, and threats to water quality. These programs further equity by protecting the historically undeserved communities who are the most affected by these coastal changes. Moreover, the National Centers for Coastal Ocean Science provides coastal managers with scientific information to protect public health, preserve valued habitats, and foster sustainable community interaction with coastal ecosystems. The value of public health has never been clearer than in the last year; we must increase our protection of community health through these programs. NOS also supports the Integrated Ocean Observing System (IOOS), which collects and distributes data that is used at the National, regional, State, and local levels. We recommend IOOS be supported at a recommended $69.5 million to meet the safety, economic and stewardship needs of the Nation.

The NOS also administers the Office of National Marine Sanctuaries and key restoration projects that dramatically enhance the resilience of coastal communities and ocean environments. National Marine Sanctuaries require $84.5 million to protect and steward special marine spaces, especially in the face of climate change, and

develop the next generation of ocean stewards. These investments pay serious economic dividends: Sanctuaries generate approximately $8 billion annually for local economies and NOAA's restoration projects create an average of 17 jobs for every $1 million invested. Moreover, for each million invested in strengthening coastal communities against storm surge, these programs can mitigate six million dollars in losses while also protecting the livelihoods and wellbeing of coastal Americans. We ask the subcommittee to support the NOCSF and the NOS to bolster the Nation's economic and environmental resilience and security.

OCEAN ACIDIFICATION

Ocean acidification is evident along every shoreline and is majorly impacting economies worldwide. By changing the chemistry of seawater, ocean acidification endangers shellfish, corals, and other marine life and disrupts marine food webs. Ocean acidification poses a fundamental risk to fisheries and aquaculture industries and to human health, as well as a potentially catastrophic risk to our economy. We strongly urge you to allocate a minimum of $57.2 million for NOAA's Integrated Ocean Acidification program to support critical research, monitoring, education, and outreach. It will help develop a better understanding of the causes, impacts, and scale of ocean acidification and identify interventions to help protect fisheries and aquaculture.

SUSTAINABLE FISHERIES & AQUACULTURE

Fishing is a cornerstone of the ocean economy and an important aspect of American history and culture. Since 1976, we have seen tremendous progress toward creating and maintaining sustainable fisheries domestically and internationally, in part due to your subcommittee's commitment to scientifically-sound fishery management. Aquaculture is also a growing aspect of America's seafood Economy, which NOAA is increasingly investing in.

However, America's seafood industry is currently being challenged by changing ocean conditions, shifts in historic stock distributions, increasingly complex data requirements, and market disruption from the COVID–19 pandemic. NOAA Fisheries requires elevated funding to address these challenges and ensure fisheries can recover from the pandemic's impacts and aquaculture can advance sustainably. Better science and real-time data inform management decisions and provide regional management councils with tools to assess the status of fish stocks. To protect America's fisheries and the jobs that rely on them, we support allocating $1.1 billion to the National Marine Fisheries Service to fully implement the Magnuson-Stevens Fishery Conservation and Management Act. In addition, we urge you to provide $206 million for fisheries data collections, with $6.8 million for surveys and stock assessments. We also urge you to support full implementation of the U.S. Seafood Import Monitoring Program to address IUU fishing and other initiatives to spread sustainable fisheries management globally. Further, we recommend funding the research and expansion of aquaculture to increase sustainable American seafood. These initiatives will not only increase sustainability but also create quality jobs for coastal Americans.

CONCLUDING REMARKS

The Joint Initiative greatly appreciates your commitment to addressing the challenges of our maritime nation, and to the ocean-climate nexus, so critical to the future of our blue planet. We appreciate your consideration of our fiscal year 2022 request. We will continue to track progress on key ocean and coastal programs and accounts in fiscal year 2022 and beyond, and we stand ready to assist you in advancing positive and lasting changes in the way we manage our Nation's oceans and coasts.

JOINT INITIATIVE CO-CHAIRS AND LEADERSHIP COUNCIL MEMBERS

The Honorable Christine Todd Whitman | The Honorable Norman Mineta
Frances Beinecke | Don Boesch | The Honorable Norm Dicks | Quenton Dokken
Robert Gagosian | Sherri Goodman | Scott Gudes
The Honorable Conrad Lautenbacher | Margaret Leinen | Julie Packard
The Honorable Leon Panetta | John Pappalardo | The Honorable Pietro Parravano
Randy Repass | Larry Robinson | Andrew Rosenberg | Paul Sandifer

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PREPARED STATEMENT OF THE MONTEREY BAY AQUARIUM, MONTEREY, CALIFORNIA

The Monterey Bay Aquarium is pleased to submit this statement in support of President Biden's $6.9 billion dollar budget for the National Oceanic and Atmospheric Administration (NOAA) within the Fiscal Year 2022 Commerce-Justice-Science Appropriations Act. The following testimony outlines several specific requests within NOAA for priority research, education and grant programs that are needed in California, the West Coast and nationwide, particularly as the Nation looks to recover from the devastation of the COVID–19 global pandemic.

In a typical year, the Monterey Bay Aquarium welcomes over two million visitors, provides more than 91,000 students and 5,000 teachers with award-winning education programs at no cost, and provides valuable data, tools and approaches for conservation and science at local to global scales.

The COVID–19 global pandemic dramatically impacted our institution, which has suffered the loss of approximately $70 million in revenue and 40 percent of our staff over the 14 months during which we were fully closed to the public. Despite earning zero gate revenue, we continued to spend over $1 million every month on animal care and life-supporting core operations—including for endangered, threatened, and protected species care and stranding response and rehabilitation. In addition, we provided enhanced and free digital and livestreamed educational content for schools and the wider public. The Aquarium has taken extraordinary measures to ensure the health and safety of our animals, staff and the public during this challenging time, and we are hopeful that emergency grant funds appropriated in the past two COVID–19 bills will provide some economic relief. We are grateful to Congress and to the Committee for its role in COVID–19 relief and recovery.

Monterey County has only recently achieved the public health metrics that allow us to reopen. We reopened May 15 to the public at 25 percent capacity and are gradually increasing our guest capacity so that we may more fully return to our mission-*to inspire conservation of the ocean.*

NOAA, the Nation's lead science agency for oceanic and atmospheric matters, provides important tools and services that are critical to support economic recovery during these challenging times. NOAA's research, environmental observations and predictions, marine conservation and management, as well as its education programs and services shape the way we live today and guide decision-making about the health of the coupled ocean and climate systems.

The Aquarium strongly supports the President's budget request of $6.9 billion dollars for fiscal year 2022 and encourages the Committee to continue its balanced and strategic funding strategy for NOAA. These investments are needed to support American businesses and citizens as we recover from the COVID–19 crisis and build capacity for future resilience in the face of climate change. We urge you to support the following requests for fisheries, research, and education in fiscal year 2022 that are particularly important for California and West Coast communities.

Pacific Bluefin Tuna.—Pacific bluefin tuna are a highly migratory species that are critical to California's economy and a key top predator in the ocean. Among the world's largest fish, these tunas are highly prized on the international seafood market. In 2014, researchers discovered that the population was depleted to 3.3 percent of its historic size. No other commercially harvested tuna in the world is so depleted. Annual fluctuations in availability of Pacific bluefin tuna impacts the ecosystem and stakeholders, including California's $2.8 billion marine sportfishing industry and research institutions that have invested millions of dollars in recent decades to develop conservation strategies for this critical species.

In the last few decades, Pacific bluefin tuna have been heavily impacted from fishing by nations in the Western Pacific Ocean, limiting the availability of fish that can migrate to the coast of California and Mexico. Pacific bluefin tuna are managed by two Regional Fisheries Management Organizations (RFMOs) that have allowed the population to decline to historically low levels. In 2017, the United States se-

cured a historic international agreement to recover the population to sustainable levels by 2034—a major achievement. However, this hard-won recovery plan is at risk as other countries continue to propose policies that would slow population recovery and disadvantage U.S. stakeholders. A more precautionary approach is needed in the international negotiations to recover the species, including more stringent harvest control rules that ensure measurable interim progress in rebuilding to hold other countries accountable.

In recent years, the RFMOs adopted Management Strategy Evaluation (MSE) as a tool to optimize science-based decisions, provide transparency and ensure stakeholder engagement in international fisheries management. In the fiscal year 2019 and fiscal year 2020 CJS appropriations reports, Congress urged NOAA to support Management Strategy Evaluation (MSE) for Pacific bluefin tuna but there has been little progress.

It is critical for Congress to provide clear direction to NOAA given the precarious status of Pacific bluefin tuna and risks related to the upcoming international negotiations. Current international science and management processes do not follow standards set for U.S. stocks within our exclusive economic zone, particularly on sustainability, transparency and independent science. That must change. Congress must urge NOAA leadership to ensure NOAA Fisheries takes a strong position on the need for scientific integrity, independent science and management accountability in international fisheries. NOAA Fisheries must provide MSE capacity or similar science-based decision processes that can ensure accountability by all countries as well as meaningful stakeholder engagement. Importantly, NOAA Fisheries must adopt a strong negotiating position that includes more precautionary harvest control rules that will ensure measurable interim progress to recover the population. These steps are needed to enable robust science, transparency and accountability at the RFMOs that are strongly influenced by the interests of stakeholders in Japan and other countries.

Corresponding Report Language Request:

> PACIFIC BLUEFIN TUNA.—The Committee is very concerned with the status of the iconic Pacific bluefin tuna, the world's most depleted species of commercially-caught tuna. The Committee directs NOAA leadership to work with the Office of Science and Technology Policy and other experts in the Administration, to ensure NOAA Fisheries takes a strong position on the need for scientific integrity, independent science and management accountability for internationally managed species. The Committee directs NOAA Fisheries to adopt a precautionary negotiating position with strict harvest control rules that ensure measurable interim progress in rebuilding Pacific bluefin tuna and holds all countries accountable to recover the population to sustainable levels no later than 2034. The Committee also requests that NOAA Fisheries provide capacity for Management Strategy Evaluation or similar processes to optimize science-based decisions, provide transparency and ensure an equitable balance of responsibility and benefits as the stock recovers. Further, the Committee directs NOAA Fisheries to provide resources to support engagement of the Pacific Fishery Management Council and U.S. stakeholders in the formulation of strong U.S. positions throughout the international negotiations.

Pacific Ocean Pelagic & Highly Migratory Fisheries Research.—Pelagic and highly migratory species (HMS) in the Pacific Ocean support thousands of jobs and generate hundreds of millions in revenue related to commercial and recreational fishing, as well as related seafood industries. These species include valuable tunas (albacore, skipjack, bigeye, bluefin), swordfish, marlin, and pelagic sharks that drive significant economic activity along the West Coast, Hawaii and the U.S. territories. However, Federal funding opportunities for non-Federal scientists in pelagic and HMS research programs in the Pacific have declined considerably since the *Pacific Fisheries Research Program* (PFRP) ended in 2013. This has resulted in significantly fewer public-private research collaborations with NOAA and a lack of independent science to address priority management questions that directly impact U.S. stakeholders and the health of the Pacific Ocean ecosystem. Atlantic pelagic and HMS fisheries research has dedicated Federal programs for individual species, notably the Atlantic *Bluefin Tuna Research Program,* as well as a new *HMS Research Program through Sea Grant.* We urge the subcommittee to provide additional funding and report language to request that NOAA Fisheries establish a comparable multi-year research grant program for the Pacific regions. This new HMS research program will focus on priority projects to address key science gaps and management challenges through collaboration between NOAA, academia, independent scientists and other relevant institutions.

Corresponding Report Language Request:

PACIFIC HIGHLY MIGRATORY SPECIES RESEARCH.—The Committee notes the ecological and economic importance of Pacific highly migratory species such as tunas, swordfish, marlin, and pelagic sharks. The Committee is concerned by the lack of parity between Atlantic and Pacific regions for independent research on highly migratory species that limits science-based management and impacts U.S. stakeholders. The Committee provides an additional $2.6 million dollars per year and directs NOAA Fisheries to establish a multi-year highly migratory species research grant program for the Pacific regions to address critical science gaps and management challenges in collaboration with academia, independent scientists and other relevant institutions.

Ocean Science and Technology.—The Aquarium collaborates with the Monterey Bay Aquarium Research Institute (MBARI) on science and conservation issues of mutual interest. The success of our efforts to harness cutting edge research to address challenging ocean-related issues is dependent on a vibrant ocean science and technology enterprise. To continue to generate science-based solutions to restore our ocean, and support a robust U.S. role in global efforts, we urge the subcommittee to bolster funding for essential new science and technology. Through NOAA and the other relevant agencies, including NSF and NASA, we recommend the subcommittee provide support for research and technology development and ocean science. Specifically, we request funding to ensure we meet the goals set forth by the 2020 NOAA Research Council's science and technology focus area strategies and the *National Strategy for Mapping, Exploring, and Characterizing the U.S. EEZ,* particularly the need to use cutting edge technologies, such as *robotics* and *environmental DNA,* to map and characterize biodiversity, habitats like seamounts and deep corals, and sea floor hazards.

Bycatch Reduction.—We recommend that the subcommittee include an increase of $2 million over fiscal year 2021 funding for bycatch reduction competitive grants to non-Federal researchers for the development and implementation of practical bycatch solutions that support sustainable U.S. fisheries. The program has not received an increase in funding over the past 3 years. We request that the subcommittee increase funding for NOAA's bycatch reporting and reduction programs to accelerate technology improvements and help U.S. fishermen achieve greater environmental sustainability while protecting living marine resources, particularly endangered, protected and threatened species.

NOAA Education.—The Aquarium is committed to ensuring diversity among our staff and within the professional spheres of our field. NOAA's José E. Serrano Educational Partnership Program (EPP) with Minority Serving Institutions (MSI) provides STEM education and future workforce training, benefiting both the agency and other organizations by creating a pool of diverse candidates for the future workforce. Its over 20-year history has shown its effectiveness, but at this moment in time, the need is greater than ever. We are proud to work with the EPP centers and urge the subcommittee to provide additional funds for the EPP–MSI program to support expansion of the EPP network, particularly to build professional opportunities on the West Coast and build technical capacity within the next generation to address emerging challenges.

John H. Prescott Marine Mammal Rescue Assistance Grant Program.—We urge the subcommittee to increase funding by providing $4 million over fiscal year 2021 levels for this important stranding and rescue program.

Thank you for your consideration of these requests.

[This statement was submitted by Ms. Margaret Spring, Chief Conservation & Science Officer.]

PREPARED STATEMENT OF THE NATIONAL AMERICAN INDIAN COURT JUDGES ASSOCIATION

DEPARTMENT OF JUSTICE

On behalf of the National American Indian Court Judges Association (NAICJA), this testimony addresses important programs in the Department of Justice (DOJ). First, NAICJA joins the American Bar Association (see attached letter) in requesting substantially increased funding for Tribal courts in response to the $1.2 billion annual shortfall for Tribal courts as identified in the Bureau of Indian Affairs (BIA) 2020 report to Congress, *Report to the Congress on Spending, Staffing, and Estimated Funding Costs for Public Safety and Justice Programs in Indian Country, 2018.*

Secondly, NAICJA joins the National Congress of American Indians (NCAI) in requesting:

Program	NCAI Fiscal Year 2022 Request
DOJ: Tribal Grants: Eliminate competitive grant funding process and utilize Justice Department appropriations as base funding so that Tribal nations determine their own priorities.	Use DOJ appropriations as base funding.
DOJ: Tribal Set-Aside from Office of Justice Programs (OJP) ..	Create a 10 percent Tribal set-aside for all discretionary OJP programs.
DOJ: Tribal Set-Aside from Crime Victims Fund	Create a 5 percent set-aside for Tribal governments.
DOJ: Tribal Youth Program under the Juvenile Accountability Block Grants program.	$25,000,000
DOJ: Tribal Civil and Criminal Legal Assistance (TCCLA) Grant.	$3,000,000
DOJ: Community Oriented Policing Services (COPS) Tribal Law Enforcement.	$52,000,000
DOJ: OVW Tribal programs under the Violence Against Women Act (VAWA).	Fully fund all VAWA-authorized programs including the Sexual Assault Clearinghouse and $5,000,000 for Tribal implementation of VAWA special domestic violence criminal jurisdiction.

NAICJA is a non-profit organization devoted to the support of American Indian and Alaska Native justice systems through education, information sharing, and advocacy. Its membership is primarily judges, justices, and peacemakers serving in Tribal justice systems. As a national representative organization, NAICJA's mission is to strengthen and enhance Tribal justice systems, including juvenile justice systems.

The Federal Government's trust responsibility to Tribal nations is at the heart of NAICJA's recommendation to follow NCAI's fiscal year 2022 Indian country budget request. Like all other governments, Tribal nations are responsible for the protection and care of their citizens, residents, and visitors on Tribal lands. Through treaties and other agreements, Tribal lands were ceded in exchange for the promise of protected self-governance and adequate resources from the United States. Those promises are the foundation of the government-to-government relationship that exists today.

Part of the Federal trust responsibility to Indian Tribes includes basic governmental services in Indian Country, funding for which is appropriated in the discretionary portion of the Federal budget. Tribal governments protect and preserve their unique cultures, identities, and natural environments for future generations. As governments, Tribes must deliver a wide range of critical services, such as education, workforce development, youth programs, and first-responder and public safety services, to their citizens. The Federal budget for Tribal governmental services reflects the extent to which the United States honors its promises to Indian people—and to date, those promises have not been truly honored.

Tribal justice systems historically have been under-funded and continue to be under-funded in most Tribal communities. In 1991, the United States Civil Rights Commission found that "the failure of the United States Government to provide proper funding for the operation of Tribal judicial systems . . . has continued for more than 20 years."[1] In 2014, the Attorney General's Advisory Committee on American Indian and Alaska Native Children Exposed to Violence noted that Department of Justice (DOJ) funding for Tribal justice systems has been consistently decreasing in recent years.[2] The Indian Law and Order Commission (ILOC) noted

[1] United States Commission on Civil Rights, *The Indian Civil Rights Act: A Report of the United States Commission on Civil Rights* 71 (June 1991).

[2] Attorney General's Advisory Committee on American Indian and Alaska Native Children Exposed to Violence, U.S. Dep't of Justice, *Report of the Advisory Committee on American Indian and Alaska Native Children Exposed to Violence: Ending Violence So Children Can Thrive* 53 (November 2014).

that in addition to funding shortfalls, DOJ's short-term, competitive funding approach is deficient because it reflects Federal priorities rather than Tribal ones, favors hired grant-writers, requires Tribes to compete against each other, and offers only 3-year programs that often leave Tribes with staff turnover and short-term programs.[3]

Further, the Civil Rights Commission continued reporting on this topic with *A Quiet Crisis: Federal Funding and Unmet Needs in Indian Country* in 2003 and *Broken Promises: Continuing Federal Funding Shortfall for Native Americans* in 2018. *Broken Promises* found that "Federal funding for Native American programs across the government remains grossly inadequate to meet the most basic needs the Federal Government is obligated to provide . . . Since 2003, funding for Native American programs has mostly remained flat, and in the few cases where there have been increases, they have barely kept up with inflation or have actually resulted in decreased spending power."[4]

Finally, in 2020, the BIA submitted a report to Congress, *Report to the Congress on Spending, Staffing, and Estimated Funding Costs for Public Safety and Justice Programs in Indian Country, 2018.* The total annual estimated need for Tribal public safety and justice programs included $1.3 billion for Tribal law enforcement and $1.2 billion for Tribal courts. According to the same report, BIA funding only meets 14.7 percent of estimated need. Leaving Tribes to fight for short-term funds via competitive grant processes, many administered by the DOJ.

DOJ funding across programs affecting Indian country should be dramatically increased and the distribution mechanism modified. As nations, Tribes should not have to compete for short-term grants that reflect Federal priorities. Rather, funds should be allocated as flexible base funding.

Create a 10 percent Tribal allocation across all Office of Justice Programs (OJP) programs.—A 10 percent OJP Tribal set-aside would simplify the Federal funding process by which Tribal nations receive resources to establish Tribal courts; assist in developing detention facilities; provide legal assistance; develop and maintain juvenile delinquency prevention programs; and provide substance abuse prevention programs. Further, the Tribal set-aside provides Tribes the flexibility to develop a comprehensive strategy on public safety and justice needs. It also would create new opportunities for coordinating BIA and DOJ funding to reduce inefficiencies and unnecessary administrative costs.

Include Tribal governments in disbursements from the Crime Victims Fund.—The Crime Victims Fund (CVF) is the Federal Government's primary funding source for providing services to victims of crime. Unlike State and territorial governments, which receive an annual formula distribution from the CVF, Indian Tribes were only able to access CVF funds via pass-through grants at the discretion of the States or by competing for very limited resources administered by the DOJ. This system left a significant unmet need in most Tribal communities—communities where crime victimization rates far exceed the National average.

For the past 4 years, Congress has directed a portion of the overall disbursements from the CVF to Tribal nations. The 5 percent Tribal set-aside included in the fiscal year 2021 appropriations bill will direct $100.75 million to support and improve crime victim services on Tribal lands. This funding greatly impacts crime victims' services infrastructure on Tribal lands, and it is imperative that it be appropriated on an annual basis to sustain the programs and services that will be developed. NAICJA urges the committee to keep disbursements from the CVF at the increased level and to direct an amount equal to 5 percent of overall CVF disbursements to Tribal governments on a non-competitive basis.

If Congress declines to adopt the flexible 10 percent set-aside across OJP programs, restore fiscal year 2010 levels of $25 million in funding for the Tribal Youth Program (TYP) under the Juvenile Accountability Block Grants Program.—Native youth living in Indian country face numerous overlapping barriers to safety, wellness, academic achievement, and positive youth development. Barriers occur at the individual, family, community, and regional levels, resulting in disproportionate involvement with juvenile justice, child welfare, and other youth-serving systems. Today's Native youth continue to face the effects of collective intergenerational and historical traumas.

TYP is the first OJJDP program dedicated to prevention, intervention, and juvenile justice system improvement in Native communities. The need for the program can be demonstrated by the application rates within the last 5 years. For the major-

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[3] Indian Law and Order Commission, *A Roadmap for Making Native America Safer: Report to the President & Congress of the United States* 83 (2013).

[4] United States Commission on Civil Rights, *Broken Promises: Continuing Federal Funding Shortfall for Native Americans,* 4 (December 2018).

ity of those years, the DOJ Coordinated Tribal Assistance Solicitations, Purpose Area 9 (TYP) received some of the highest number of grant applicants and categorically received the least amount of funding. Further exacerbating the issue, TYP is currently funded at some of its lowest levels since its establishment in the 1990s. This is despite an increase in funding in fiscal year 2021, the first increase in 3 years. Due to this decreased funding, hundreds of Tribes across the United States are left grappling with how to ensure that their most cherished resource is provided equal opportunity as other youth in this country to heal, thrive, and realize their life potential. Funding for the TYP should, at minimum, be restored to its fiscal year 2010 level of $25 million.

Fund the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance (TCCLA) grant program at a level of $3 million.—The Indian Tribal Justice Technical and Legal Assistance Act of 2000 (Public Law 106–559) authorized DOJ to award grants to non-profit entities, such as the 25 Indian Legal Services programs connected with the Legal Services Corporation (LSC), to provide civil and criminal legal assistance to both Tribal governments and their justice systems and to individual indigent Tribal citizens. Services impacted by this funding include domestic violence, pro se assistance, re-entry and expungements, child welfare, free legal clinics and toll-free hotlines, and much more.

Increase funding of Tribal law enforcement programs under DOJ's Community Oriented Policing Services (COPS) Grants to $52 million.—Since its inception, the COPS Office has awarded more than 2,000 grants totaling over $400 million to Tribes to hire more than 1,700 new or redeployed law enforcement officers. It has helped Tribes obtain necessary law enforcement training, equipment, vehicles, and technology. The COPS Office has also become one of the primary resources available to Tribal law enforcement agencies attempting to develop and maintain policing infrastructure and upgrade outdated equipment. Yet, there is still substantial unmet need within Tribal justice systems for more COPS funding.

Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for the Sexual Assault Clearinghouse and Tribal implementation of VAWA special domestic violence criminal jurisdiction.—It is estimated over 85 percent of American Indian and Alaska Native women will experience violent victimization in their lifetimes.[5] OVW provides funding to Tribal governments to address violence against women in their communities. OVW's largest source of funding for Tribal governments is the Grants to Tribal Governments Program, which is funded via statutory allocations from other OVW programs. Fully-funding these OVW programs results in full funding for the Grants to Tribal Governments Program and for the implementation of Special Domestic Violence Criminal Jurisdiction.

CONCLUSION

Thank you for your consideration of this testimony. For more information, please contact A. Nikki Borchardt Campbell at nikki@naicja.org.

[This statement was submitted by A. Nikki Borchardt Campbell, Executive Director.]

[5] U.S. Department of Justice, *Violence Against American Indian and Alaska Native Women and Men: 2010 Findings from the National Intimate Partner and Sexual Violence Survey* 2 (2016).

PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF ASSISTANT UNITED STATES ATTORNEYS

June 23, 2021

Chair Jeanne Shaheen
Senate Subcommittee on CJS
Senate Appropriations Committee
Washington, DC 2051

Ranking Member Jerry Moran
Senate Subcommittee on CJS
Senate Appropriations Committee
Washington, DC 2051

RE: National Association of U.S. Attorneys Written Testimony on fiscal year 2022 Appropriations for the Department of Justice

DEAR CHAIR SHAHEEN, RANKING MEMBER MORAN, AND SUBCOMMITTEE MEMBERS:

On behalf of the National Association of Assistant United States Attorneys (NAAUSA), representing the interests of over 6,000 Assistant U.S. Attorneys working in the 94 U.S. Attorney Offices, I write you concerning the issue of pay equity and disparity at DOJ and offer comments for the record to the subcommittee on Commerce, Justice, Science and Related Agencies Appropriations relating to fiscal year 2022 appropriations for the Department of Justice.

For over 30 years, AUSAs have asked their employer—the Department of Justice—for one thing: be paid the same as other lawyers within DOJ who have the same experience, years out of law school, and years of service. AUSAs are paid significantly less than other DOJ attorneys with the same experience and responsibilities, often as much as $40,000 per year. This pay gap is profoundly unfair, widely known, and deeply destructive to morale. AUSAs are some of the Nation's most selfless and dedicated public servants, many of whom forego much higher-paying jobs in the private sector in order to serve the public interest. That AUSAs around the country are systematically paid far less than their colleagues—many of whom work shoulder-to-shoulder on the same cases, and sometimes in the same cities and even same offices—is indefensible. NAAUSA calls upon Congress to investigate and help rectify this inequity.

The pay disparity has existed since the 1980s, and occurs in part because AUSAs are paid on a different pay scale than other DOJ attorneys, and most other Federal Government employees. AUSAs are paid on the Administratively Determined (AD) pay scale, which has historically resulted in less pay under the pay scale for nearly all other DOJ attorneys and employees who are paid under the General Schedule (GS) or are members of the Senior Executive Service (SES). This split pay system has allowed significant pay disparities to develop between attorneys who have the same experience and in turn drives chronic, costly, and disruptive retention problems in U.S. Attorney Offices across the country. More than that, though, it is just unfair.

In the Partnership for Public Service's Best Places to Work in the Federal Government, while U.S. Attorney's Office reported above median and upper quartile scores in nearly every category since 2007, pay satisfaction has seen lower quartile scores in 11 of the last 12 survey years. In 2019, U.S. Attorneys' Offices ranked 350 of 415 in agency subcomponents regarding attitudes toward pay.[1]

While some AUSAs do join Main Justice or other parts of the civil service seeking improved compensation, often AUSAs are lured to the private defense bar and are immediately litigating against the government, after taxpayers have invested in their training.

NAAUSA calls on the Congress to end this cycle by investing in our Nation's career Federal prosecutors and ensuring pay equity between AUSAs and DOJ attorneys. Fairly compensating Federal prosecutors so that they are paid the same as their trial attorney colleagues and all other DOJ component attorneys who work for the FBI, DEA, ATF, BOP and others, all of whom do the same or similar work on behalf of our citizens would strengthen the rule of law, support national security, and it is the right thing to do.

Congress has consistently allocated additional funds toward U.S. Attorney Offices to cover the salary and expenses of Assistant U.S. Attorneys (AUSAs). However, this money has overwhelmingly been spent on hiring and onboarding additional AUSAs rather than toward appropriately compensating the current cadre of AUSAs. As a result, there is a significant and damaging pay inequity between AUSAs and other Department of Justice attorneys.

NAAUSA encourages Congress to:

[1] https://bestplacestowork.org/rankings/detail/DJ09

1. Engage the Department and EOUSA regarding pay disparity. The Department should be able to produce evidence and data supporting its positions and should answer why AUSA pay inequity is fair.
2. Request the Government Accountability Office (GAO) to study pay equity at the Department of Justice, including between the AD and GS pay systems.
3. Authorize additional appropriations for EOUSA specifically to close the attorney pay gap.

As our Nation faces more evolved forms of Federal criminal activity, such as domestic terrorism, cybercrime and drug smuggling networks, it is imperative we have a knowledgeable, experienced class of litigators able to prosecute these criminals working in U.S. Attorney Offices as AUSAs. The current system invests in hiring and training new AUSAs, but fails to incentivize these individuals to remain as Federal prosecutors. This leaves the government, after having invested time and training into new employees, without some of the most skilled litigators for the job. The Department of Justice should want to retain experienced, skilled litigators to defend our Nation against criminal activity, and that requires proper compensation for duties equivalent to many other DOJ attorneys.

NAAUSA has engaged the Attorney General's Advisory Committee (AGAC) on this topic over the years. While we were heartened by some steps in recent years by the AGAC and the Department to address this issue, including in 2016 administratively elevating the minimum entry-level AUSA pay to compare to a GS–11, more is needed to assure pay equity for DOJ attorneys, including the Department sharing all of the data and evidence upon which it is comparing attorney compensation under the GS and AD systems. The Department has recently admitted to NAAUSA that the compensation disparity between AUSAs and Justice lawyers is real and could be closed with an investment of a mere $42 million per year.

Workforce churn, staff attrition with loss of expertise, and decreased morale have real costs for taxpayers in terms of lost productivity, and potentially undermine the capacity of U.S. Attorney Offices to accomplish their missions. It is for these reasons we bring this issue to the attention of Congress. Even amidst the COVID–19 pandemic, Assistant U.S. Attorneys are considered essential employees and are contributing to upholding and enforcing the rule of law in our country. We must ensure the Department of Justice properly manages and compensates these important members of the Federal law enforcement community.

Thank you for considering the perspective of NAAUSA. Please do not hesitate to reach out to our Washington representative Jason Briefel (jbriefel@shawbransford.com) regarding this matter.

Respectfully,

LAWRENCE. J. LEISER
President

THE IMPACT OF PAY INEQUITIES ON THE ADMINISTRATION OF JUSTICE

The Administratively Determined (AD) pay plan, which Assistant U.S. Attorneys (AUSAs) are subject to, creates a significant pay disparity between AUSAs and all other DOJ attorneys. Aside from clear equity issues, the disparity negatively impacts recruitment and retention of the more than 6,000 criminal prosecutors and civil attorneys most directly tasked with administering justice across our Nation's 94 Federal judicial districts. The current pay system over relies on the goodwill on AUSAs who are willing to take a pay cut to serve their country. This is unsustainable and places our U.S. Attorney Offices at a disadvantage in the recruitment and retention of qualified personnel. Without top talent our criminal justice system cannot adequately serve and protect the American people.

—The DOJ attorney pay policy authorizes higher salaries for attorneys in main Department of Justice (DOJ) components than AUSAs. The discrepancy reaches over $40,000, as noted in the chart below which compares GS attorney base pay and AD AUSA base pay in 2021.[2]

Years of Experience	GS Grade	AD Grade	GS Min Pay	AD Min Pay	Percent Difference
0–2 years	GS 11–13	AD–21	$55,756	$55,756	N/A
3–4 years	GS 14–15	AD–23	$93,907	$59,906	$34,001 (44 percent)
5 years	GS 15	AD–25	$110,460	$64,367	$46,093 (52 percent)
6 years	GS 15	AD–26	$110,460	$69,159	$41,301 (46 percent)
7 years	GS 15	AD–27	$110,460	$74,309	$36,151 (39 percent)

—AUSAs have for over 30 years identified pay parity issues as a detriment to their workplace wellbeing. For example, in the Partnership for Public Service's Best Places to Work in the Federal Government Survey, while U.S. Attorney's Office reported above median and upper quartile scores in nearly every category since 2007, the pay satisfaction category has reported lower quartile scores in 11 of the last 12 survey years. In 2019, U.S. Attorneys' Offices ranked 350 of 415 in agency subcomponents regarding attitudes toward pay.[3]

—Based on advocacy efforts by NAAUSA, the DOJ made minor adjustments in the AD pay scale in 2016. While these adjustments did not come close to bridging the gap between pay scales, they did result is a slight increase in survey scores. The immediate positive impacts on FEVS scores by AUSAs demonstrates the importance of this issue and willingness to work toward pay parity.

—In testimonials anonymously collected by NAAUSA, AUSAs consistently report taking pay cuts to serve as AUSAs due to a genuine desire to serve the public as our Nation's premier criminal prosecutors or civil attorneys. However, as the pay disparity worsens with advancement, many are forced to leave their positions in favor of positions at Main Justice or within the private sector. The pay disparity forces dedicated AUSAs out of their position or, worse, turns our U.S. Attorneys' Offices into taxpayer-funded training centers for private defense attorneys.

NAAUSA advocates for the Department to adjust the AUSA salary framework assure that AUSAs are paid the same as Department of Justice trial attorneys through movement of AUSAs onto the General Schedule.

PREPARED STATEMENT OF THE NATIONAL FIRE PROTECTION ASSOCIATION

May 14, 2021

The Honorable Patrick Leahy
Chairman
Committee on Appropriations
United States Senate
Washington, D.C. 20510

The Honorable Richard Shelby
Vice Chairman
Committee on Appropriations
United States Senate
Washington, D.C. 20510

DEAR CHAIRMAN LEAHY AND VICE CHAIRMAN SHELBY:

The National Fire Protection Association (NFPA) is a self-funded, global non-profit organization founded in 1896 dedicated to ending losses from fire, electrical, and related life safety hazards. With the unabating wildfire crisis in the U.S., NFPA recently launched *Outthink Wildfire*™, an initiative to advocate for policy change in five key areas that will stop the destruction of communities by this hazard. We write to ask for your support for key Federal programs.

The five tenets are: (1) all homes and business in areas of wildfire risk must be retrofitted to resist ignition; (2) current codes, standards, and sound land use planning practices must be used and enforced; (3) local fire departments must have adequate resources to protect their communities; (4) fuel management on Federal and non-Federal lands must be a priority; and (5) the public must be well-informed and motivated to embrace their role in reducing wildfire risk. While action on these

[2] Does not include locality pay.
[3] https://bestplacestowork.org/rankings/detail/DJ09

fronts is urgently needed at all levels of government, Federal programs need to play a key role in ending the devastating wildfire losses communities are now experiencing as discussed in this letter.

Mitigating Wildfire Severity

NFPA supports the Administration's fiscal year 2022 proposal to provide *$1.7 billion* in funding for high-priority hazardous fuels and forest-resilience projects to the U.S. Forest Service (USFS), in addition to the proposed $340 million to the Department of the Interior (DOI) for hazardous fuel treatments on its lands. As identified in the *National Cohesive Wildfire Management Strategy,* denser, more continuous fuel on landscapes now outside of their natural ecological fire regimes is a major contributor to the severe wildfires that threaten communities and drain Federal fire suppression resources. The U.S. must increase the rate of fuel treatments, including prescribed burning, to address the millions of acres now at high or very high risk of wildfire.

In addition to increased resources for hazardous fuel treatment projects, NFPA supports programs that enable collaboration between the USFS and its partners, assist State and private land managers in restoring forest health, and encourage landscape-scale restoration projects. For example, the Collaborative Forest Landscape Restoration program has been successful in reducing fire risk and achieving other management objectives through a stakeholder-driven process aimed at minimizing conflict.[1] Given the National Cohesive Strategy's call for increased landscape-scale fuel treatment and forest health projects, funding this program at its authorized level of *$80 million* can help continue and expand on its success. Similarly, the Landscape Scale Restoration Program should receive *$20 million.*

Finally, NFPA supports a robust budget for forestry research, including programs to better understand wildfire behavior and landscape treatment strategies, as well as programs to develop new wood products and markets to create more financial incentives for hazardous fuel treatment. As part of that funding, the Joint Fire Sciences Research program should receive *$8 million* each for the USFS and DOI. NFPA also believes research funding for the built environment aspect of wildfire resilience should be increased and thus supports the Administration's proposal to increase funding for the National Institute of Standards and Technology (NIST), particularly for efforts to improve resiliency through building codes.

Assisting State & Local Fire Departments

State and local fire response resources play a major role in preparing for and responding to wildfires on both public and private lands, making the USFS funds provided by the State Fire Assistance (SFA) and Volunteer Fire Assistance (VFA) programs critical to public safety. According to the National Association of State Foresters, members of State and local fire departments are the first to respond to 80 percent of wildfires. Findings from NFPA's 2016 *Fourth Needs Assessment of the U.S. Fire Service*[2] that the majority of fire departments with wildfire response responsibilities lack sufficient training and personal protective equipment reveal a significant gap in safety, for both the responders and the lives and properties of the communities they protect.

SFA and VFA are critical safety programs for supporting wildland urban interface (WUI) communities, funding hazardous fuels treatment in the WUI, supporting fire planning projects, and helping to train and equip State and local responders. SFA also supports public education and community capacity development programs like *Firewise USA®* and the *Fire Adapted Communities Learning Network.* These programs teach WUI residents how to lower wildfire risk to their homes and support community mitigation activities. Therefore, NFPA supports funding the State Fire Assistance program at *$88.5 million* and the Volunteer Fire Assistance program at *$20 million.*

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[1] *See e.g., Schultz, Courtney, et al.* (2017) *Strategies for Success Under Forest Service Restoration Initiatives,* Ecosystem Workforce Working Paper, Number 81 (https://tinyurl.com/38b3cpz4)

[2] National Fire Protection Association (2016) Fourth National Needs Assessment, https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Needs-assessment, (Eighty-eight percent of U.S. fire departments—some 23,000 departments—provide wildland and/or WUI firefighting services, but 63 percent of those have not formally trained all of their personnel involved in wildland firefighting on these skills. Only 32 percent have all of their responders equipped with appropriate personal protection equipment (PPE), and 26 percent do not have any of the necessary PPE at all. Only 27 percent of departments have a health and fitness program).

Mitigation for Communities

The National Cohesive Strategy also identifies the need for fire adapted communities—communities where homes and businesses are retrofitted to resist ignition and wildfire safety codes, standards, and land use planning practices are applied. According to the *U.S. Fire Administration,* the Nation has over 70,000 thousand communities in areas at risk from wildfires, home to 46 million housing units. Preparing for wildfire through creating defensible space and home retrofits can greatly reduce the risk of loss. NFPA supports the Federal Emergency Management Agency's (FEMA) Building Resilient Infrastructure and Communities (BRIC) program and the Administration's proposal to add *$540 million* in new resources to programs tasked with helping communities undertake pre-disaster planning and make investments in resiliency. The USFS' Wildfire Hazard Severity Mapping for Communities program also supports community risk assessment and hazard mitigation planning and should continue. In addition, NFPA is also highly supportive of proposed efforts to improve resiliency and safety in HUD-assisted housing with an additional *$800 million* in new investments.

Thank you for the opportunity to share our views on Federal support for reducing wildfire risk to communities. NFPA strongly urges the Committee to support a robust budget for wildfire mitigation and we stand ready to provide any addition information that would be useful.

[This statement was submitted by L. Seth Statler, Director of Government Affairs.]

PREPARED STATEMENT OF THE NATIONAL LEGAL AID & DEFENDER ASSOCIATION

This testimony is submitted on behalf of the National Legal Aid & Defender Association (NLADA), America's oldest and largest national organization whose resources are exclusively dedicated to excellence in the delivery of legal services and to promoting access to justice for all. We are grateful for the opportunity to provide comments to the committee regarding the Legal Services Corporation (LSC) and U.S. Department of Justice (DOJ) programs.

LEGAL SERVICES CORPORATION

NLADA urges Congress to address the ongoing failure of our country to meet its foundational promise of equal justice. Even prior to the COVID–19 pandemic, LSC grantee organizations did not have sufficient resources to meet the legal needs of low-income Americans. This serious threat to our democracy has been greatly exacerbated by the events of the past year. NLADA therefore recommends an appropriation of $1.36 billion for LSC for fiscal year 2022. Civil legal aid ensures that regardless of how much money a person has, they have the same level of access to a fair adjudication of their civil legal problems as anyone else. Legal aid organizations provide assistance that enables low-income people to protect their livelihoods, health, housing, family, and other basic human needs. LSC is not only the single largest funder of civil legal aid, but also the foundational infrastructure of civil justice in the United States, making sure help is available to people in every ZIP code.

However, many eligible clients receive only minimal service, or no help at all, due to insufficient resources. In 2017, LSC conducted a comprehensive study of its grantee organizations and found that roughly 40 percent of eligible people seeking help from an LSC grantee were turned away and, of those who did receive services, only a little over half were able to have their problem fully addressed.[1] At the time, LSC's budget was $385 million. While we are sincerely appreciative for this committee's decision to provide incremental funding increases in the following years, LSC's budget remains far smaller than it would be had it simply kept pace with Federal discretionary spending, which since 1995 has in percentage terms has increased more than 12 times as much as LSC's budget has grown, or with inflation: LSC's peak funding level in fiscal year 1980 would be around $1 billion today.

It is clear that the pandemic has greatly deepened the need for additional resources, by creating a larger population of eligible clients as a result of increases in poverty and unemployment. In order to qualify for services from an LSC grantee organization, a person's household income must generally be lower than 125 percent, but can be considered up to 200 percent percent of the Federal poverty level. At around 6 percent, the unemployment rate remains almost twice as high as it was

[1] Legal Services Corporation. (2017). The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans. https://www.lsc.gov/sites/default/files/images/TheJusticeGap-FullReport.pdf

in February 2020.[2] For Black Americans it is nearly 10 percent. In February, the Urban Institute estimated that this year the National poverty rate would be around 13.7 percent,[3] compared to 10.5 percent before the pandemic.[4]

At the same time, the pandemic has also greatly increased the prevalence of civil legal problems. In July 2020, LSC reported that more than 85 percent of LSC grantees reported an increase in requests for assistance in each of the areas of housing, income, and domestic violence, and through December, LSC grantees have closed 72,115 cases linked to the pandemic.[5] This data accounts for legal problems for which a person seeks help, but an estimated 86 percent of legal problems experienced by low-income people are not even brought to a legal aid provider.[6] It is therefore certain that the actual increase in need is far higher still, and in some cases this is further exacerbated by the nature of the problem. For example, there is consensus among experts that the social isolation and economic instability caused by the pandemic have significantly increased the prevalence of domestic violence and child abuse,[7] while also making such violence and abuse more difficult to report.

Last year, NLADA used projected increases in long-term unemployment to approximate the need for civil legal aid in 2022. We estimated that when combined with resource needs that existed prior to the pandemic, $1.36 billion would be required for LSC. While it is not possible to know exactly how economic recovery for low-income Americans will develop, data continues to demonstrate widespread hardship that will persist beyond the resolution of the health crisis. For example, if eviction moratoria are allowed to expire, a swathe of low-income families will face homelessness. Emergency rental assistance programs will blunt this problem considerably but porously; not only are funds limited but reports of landlords refusing to accept funds that have been secured are growing.[8] The data is clear that access to a lawyer will make a difference, as numerous studies have demonstrated that representation can reduce the likelihood of eviction by up to around 80 percent.[9]

The need for a substantial increase in resources is further compounded by cuts to non-LSC sources of public and private funding for legal aid, such as Interest on Lawyers Trust Accounts (IOLTA) programs.[10] As our country begins to look towards recovery from the COVID–19 pandemic, Congress can help ensure that low-income Americans are not left behind by providing an appropriation for LSC that is commensurate with the level of need.

U.S. DEPARTMENT OF JUSTICE PROGRAMS

Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance

We also urge this subcommittee to continue funding in fiscal year 2022 to support the work done on behalf of Native Americans by Indian Legal Services programs that are connected with the Legal Services Corporation. We request that funding be maintained within the Department of Justice, Office of Justice Programs, under the State and Local Law Enforcement Assistance appropriations account, at a level similar to that provided in recent years, which is approximately $1 to 2 million, for the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance grant program (TCCLA). This could be either within a specified line item for "assistance to Indian Tribes," such as the $50 million the Administration has requested for fiscal year 2022 and the $46 million Congress appropriated in the fiscal year

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[2] U.S. Bureau of Labor Statistics. (2021). Civilian Unemployment Rate. Retrieved at: https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm

[3] Urban Institute. (2021, February). 2021 Poverty Projections. https://www.urban.org/sites/default/files/publication/103656/2021-poverty-projections.pdf

[4] United States Census Bureau. (2020, September). Income and Poverty in the United States: 2019.

[5] Legal Services Corporation. (2021) Data on CARES Act Funding & Services. Retrieved at: https://www.lsc.gov/about-lsc/lsc-and-covid-19/data-cares-act-funding-services.

[6] Legal Services Corporation. (2017). The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans. https://www.lsc.gov/sites/default/files/images/TheJusticeGap-FullReport.pdf

[7] Bright, C., Burton, C., and Kosky, M. (2020, October). Considerations of the impacts of COVID–19 on domestic violence in the United States. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539928/pdf/main.pdf

[8] Will Parker. (March 19, 2021). Why Some Landlords Don't Want Any of the $50 Billion in Rent Assistance. Wall Street Journal

[9] Heidi Schultheis and Caitlin Rooney. (October 2, 2019). A Right to Counsel Is a Right to a Fighting Chance: The Importance of Legal Representation in Eviction Proceedings. Center for American Progress.

[10] National Association of IOLTA Programs. (2020, May 29). $157.4 Million Projected Loss in Critical Sources of State Funding for Civil Legal Aid [Press release]. https://www.iolta.org/images/NAIP-Press-Release-5-29-20.pdf

2021 Consolidated Appropriations Act (Public Law 116–260), or within a Tribal set-aside percentage of Office of Justice Programs accounts.

The consortium of 24 Indian Legal Services programs operating in 23 States provides legal representation to thousands of American Indian and Alaska Native individuals in Tribal and State courts, and assists more than 160 Tribal governments and/or Tribal judicial systems to enhance or develop their justice systems. In at least 46 Tribal courts, these programs provide the only public defender service available. Many of these Indian Legal Services programs have been awarded funding under the TCCLA grants program. They have recently responded to the program's solicitations for fiscal year 2021 funding for both Tribal civil and criminal legal assistance.

Examples of the Indian Legal Services programs' civil legal assistance work done under TCCLA awards generally include initial drafting of Tribal laws as well as revisions to civil codes, policies and procedures; developing alternative resolution systems, based on Tribal customs and traditions; and developing and conducting Tribal court advocate training programs. Civil and criminal representation of individuals in Tribal and State courts ranges from counseling and advice to full representation in trials and appeals. Individual Indian Legal Services programs have created a comprehensive set of self-help forms for family law cases; assisted with birth certificate changes for Tribal enrollment purposes; assisted with enforcement of domestic violence protections under Tribal laws; represented families in Indian Child Welfare Act cases in State court; and provided a toll-free legal advice hotline.

Examples of the Indian Legal Services programs' criminal legal assistance work under TCCLA include assisting Tribes with drafting, revising and updating their civil and criminal codes (including children's codes), policies and procedures; Tribal court development, restructuring and improvement; training of judicial, law enforcement and justice systems personnel, and Tribal court lay advocates and guardians ad litem; and negotiation or litigation to address jurisdictional issues with State court systems. The programs are engaged in helping 18 of the 160 Tribes they serve to implement the Tribal Law and Order Act of 2010 (TLOA) and the Violence Against Women Reauthorization Act of 2013 (VAWA). Specific Indian Legal Services programs are working to enforce existing and to develop new "diversion" agreements with the State government to address criminal justice matters (and potentially-related civil matters, such as child protection) within civil Tribal proceedings—such as in Healing-to-Wellness courts; to conduct outreach to and represent individual clients in an expungement program, with the goal of alleviating barriers to employment and safe housing and restoring treaty-based hunting rights for those individuals who lost the right to possess firearms because of non-violent felony convictions; and to update Tribal codes for truancy and domestic violence while ensuring that the codes reflect Tribal customs and traditions.

In fiscal year 2022, whether the subcommittee recommends funding to DOJ for assistance to Indian Country Tribal justice programs at a specific amount, as enacted in fiscal year 2021, or as a Tribal set-aside percentage of overall DOJ funding, as has been proposed in prior fiscal years, we request that both bill and report language direct that some DOJ funding be allocated for the purpose of the provision of both Tribal civil and criminal legal assistance to individual Tribal citizens and to Tribal judicial systems pursuant to the Indian Tribal Justice Technical and Legal Assistance Act (Public Law 106–559).

John R. Justice Student Loan Repayment Assistance Program

A law degree is a requirement of all public defenders and prosecutors, but obtaining such a degree routinely leaves graduates with a six-figure student loan debt. This debt can make it financially impossible to enter low-paying jobs at public defender organizations, or to remain in those jobs for long enough to gain the experience needed to become a highly effective advocate for their clients. When this happens, it slows the functioning of the entire court system as less experienced defense attorneys and prosecutors require more time to process the same caseload.

The John R. Justice program provides relief from student loan debt by contributing to an individual's monthly student loan payments, which helps alleviate some of the problems that lead to recruitment difficulties and higher rates of turnover in public defender and prosecutor offices. However, the fiscal year 2021 appropriation for John R. Justice was just $2 million. This level of funding severely limits the scope and effectiveness of the program. This committee should fully fund the John R. Justice program at the authorized amount of $25 million for fiscal year 2021.

Violence Against Women Act (VAWA) Programs

As described earlier in this testimony, the COVID–19 pandemic has fueled concerns of rise in the prevalence of domestic violence and abuse. Even prior to that,

more than 1 in 3 women and more than 1 in 4 men in the United States had experienced rape, physical violence, and/or stalking by an intimate partner. We urge the committee to provide an appropriation that builds on the prior success of VAWA programs, but also reflects the urgency of the need to broaden their reach. In particular, we request the $77 million for grants for civil legal assistance for victims recommended by the President's budget for fiscal year 2022. Civil legal aid helps survivors secure their physical safety, break legal links with their abuser, and rebuild their lives over the long term.

None of this appropriation should be drawn from the Crime Victims Fund administered by the Department of Justice Office for Victims of Crime, because this reduces the total amount available to serve victims of crime and jeopardizes the sustainability of Crime Victims Fund over the long-term. The sustainability of the Crime Victims Fund is a bipartisan concern, as demonstrated by passage of H.R. 1652, the VOCA Fix to Sustain the Crime Victims Fund Act.

[This statement was submitted by Don Saunders, Senior Vice President for Policy.]

PREPARED STATEMENT OF THE NATURAL SCIENCE COLLECTIONS ALLIANCE

FUNDING FOR THE NATIONAL SCIENCE FOUNDATION

The Natural Science Collections Alliance appreciates the opportunity to provide testimony in support of fiscal year 2022 appropriations for the National Science Foundation (NSF). We encourage Congress to provide the NSF with *at least $10.2 billion* in fiscal year 2022.

The Natural Science Collections Alliance is a non-profit association that supports natural science collections, their human resources, the institutions that house them, and their research activities for the benefit of science and society. Our membership consists of institutions that are part of an international network of museums, botanical gardens, herbaria, universities, and other institutions that contain natural science collections and use them in research, exhibitions, academic and informal science education, and outreach activities.

Scientific collections, and the collections professionals and scientists who make, care for, and study these resources, are a vital component of our Nation's research infrastructure. These collections and their associated experts contribute to the expansion of our bioeconomy. Whether held at a museum, government managed laboratory or archive, or in a university science department, these scientific resources form a coordinated network of specimens, samples, and data (for example, genetic, tissue, organism, and environmental) that are a unique and irreplaceable foundation from which scientists are studying and explaining past and present life on earth.

Natural science collections advance scientific research and education, and that informs actions to improve public health, agricultural productivity, natural resource management, biodiversity conservation, and American economic innovation. Current research involving natural science collections also contributes to the development of new cyberinfrastructure, data visualization tools, and improved data management practices. A few examples of how scientific collections have saved lives, enhanced food production, and advanced scientific discovery include:

—Scientists used museum specimens in U.S. collections to gather data on the distribution of the mosquito *Culex quadrofaciatus,* which is known to carry West Nile Virus and other pathogens. They then modeled the distribution under different scenarios of changing climates to predict regions where the species may expand in the future. Predicting the spread of disease vectors such as these mosquitoes helps the health care community prepare for disease outbreaks and where they will happen.

—Researchers from Boston University documented Tau proteins in the brains of fluid preserved museum specimens of Downy Woodpecker (*Dendrocopus pubescens*). These proteins are also found in traumatic brain injuries in humans. Because of the life history traits of woodpeckers, the researchers argue these birds may have evolved a level of resistance to traumatic head injuries that could have implications for treatments for humans.

—In 1993, a deadly new disease appeared in the southwestern United States. Using NSF-supported biological collections at Texas Tech University and University of New Mexico, the agent was determined to be Hantavirus carried by a few species of rodents. When rodent populations increased following an El Niño weather event, the animals spread into human environments and increased the transmission of Hantavirus. With the vector known, it was possible

to lessen the risk to humans by reducing opportunities for disease transmission. Using other specimens, scientists have now identified more than 40 other strains of Hantavirus worldwide that are carried by bats, moles, and shrews. Similar work is underway to identify the carrier of Ebola in Africa.

—Citrus bacterial canker disease wreaks havoc on fruit crops in Florida. Using plant specimens collected a century ago, scientists have analyzed the bacterium and traced its source. Knowledge of how the bacteria spreads allows scientists to develop effective control methods and to protect the U.S. citrus industry.

Scientific collections enable us to tell the story of life on Earth. There are more than 1,600 biological collections in the United States. These resources are the result of more than 200 years of scientific investigation, discovery, and inventory of living and fossil species. Scientists have collected and curated more than one billion specimens within those collections. This work is on-going as new questions continue to be asked and answered.

The institutions that care for scientific collections are important research infrastructure that enable other scientists to study the basic data of life; conduct biological, geological, anthropological, and environmental research; and integrate research findings from across these diverse disciplines. Their professional staff members train future generations with the tools and expertise required to move science forward. In-house institutional staff expertise is vital to the development and deployment of this critical research infrastructure.

Recent reports highlight the value of mobilizing biodiversity specimens and data in spurring new scientific discoveries that grow our economy, improve our public health and wellbeing, and increase our National security. In 2019, the Biodiversity Collections Network issued a community-informed call for the development of an Extended Specimen Network. The report, *Extending U.S. Biodiversity Collections to Promote Research and Education,* outlines a national agenda that leverages digital data in biodiversity collections for new uses and calls for building an Extended Specimen Network. This endeavor requires robust investments in our Nation's scientific collections, whether they are owned by a Federal or State agency or are part of an educational institution or free-standing natural history museum or another research center.

A *2020 report* by the National Academies of Science, Engineering and Medicine (NASEM), *Biological Collections: Ensuring Critical Research and Education for the 21st Century,* provides guidance to the NSF regarding the sustainability of living stock and natural history collections. The report argues that collections are a critical part of our Nation's science and innovation infrastructure and a fundamental resource for understanding the natural world.

According to the U.S. Interagency Working Group on Scientific Collections (IWGSC), "scientific collections are essential to supporting agency missions and are thus vital to supporting the global research enterprise." A *2020 report* by the IWGSC presents a framework for estimating and documenting the long-term benefits, both monetary and non-monetary, generated by Federal institutional collections.

The NASEM, BCoN, and IWGSC reports, articulate a common vision of the future of biological collections and define a need to broaden and deepen the collections and associated data to realize the potential for biodiversity collections to inform 21st century science. Because the NSF is the only agency that supports research in all fields of science, it is ideally suited lead a national effort to build the Extended Specimen Network, which will require the engagement of computer and information scientists, geoscientists, life and environmental scientists, and anthropologists.

Collections are a critical resource for advancing the knowledge needed to address current global challenges such as climate change, biodiversity loss, and pandemics. The COVID–19 crisis has illustrated how inextricably linked humans are to the natural world. Biological collections, their extended data, and the experts that build and study them are globally important for understanding where viruses such as SARS-CoV-2 exist in nature or when they cross from their current hosts to humans.

In 2019, the United Nation's (UN) Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) issued a warning that about a million species of plants and animals worldwide face extinction within the next few decades. This would not only be an unprecedented loss of global biodiversity but also a loss of valuable genetic diversity that has implications for human health and well-being. Robust investments must be made to support efforts to grow and digitize natural history collections and conduct critical collections-based science that can help prevent these losses.

The NSF plays a unique role in protecting and expanding access to our Nation's scientific collections. It supports research that uses existing collections as well as

studies that gather new natural history specimens. NSF's Directorates for Biological Sciences (BIO), Geosciences (GEO), and Social and Behavioral and Economic sciences support research and student training opportunities in natural history collections. The NSF is also an important supporter of national biological research infrastructure that houses natural history collections, such as living stock collections and field stations.

The NSF funds evolving work to digitize high priority specimen collections. The result of this effort is that irreplaceable biological specimens and their associated data are now accessible through the Internet to researchers, educators, and the public. More than 125 million specimens are now online, with millions more awaiting digitization. This project involves biologists, computer scientists, and engineers in multi-disciplinary teams who develop innovative imaging, robotics, and data storage and retrieval methods. Resulting new tools and approaches expedite the digitization process and contribute to the development of new products and services of value to other industries. Museum specimens and associated data represent an extraordinary resource for teaching core concepts in science.

In addition to supporting research, NSF's science, technology, engineering, and mathematics (STEM) education programs enhance the ability of museums, botanic gardens, zoos, and other research institutions to provide science learning opportunities for students. NSF's Advancing Informal STEM Learning program furthers our understanding of informal science education outside of traditional classrooms. The program makes important contributions to efforts to make STEM more inclusive of historically underrepresented groups.

CONCLUSION

Investments in the NSF have always been in the National interest and their value continues to grow. Scientific collections contribute to improved public well-being and national economic security. It is not possible to replace this important documentation of our Nation's heritage. Specimens collected decades or centuries ago are increasingly used to develop and validate models that explain how species, including viruses, parasites, and pathogens have dispersed around the world, as well as how and when they might infect humans now and in the future. The NSF is the primary funding source that provides support to institutions that preserve at-risk scientific collections. These small grants help ensure these collections are not destroyed and their data lost.

Investments in NSF programs that support natural science collections research and education are essential if we are to maintain our global leadership in innovation and biodiversity research. We also see these investments as critical for our efforts to grow diversity and inclusion in the scientific workforce. Please support funding of at least $10.2 billion for NSF in fiscal year 2022. We also request that Congress provide additional economic relief, such as the provisions outlined in the RISE Act (HR. 869, S. 289), to the U.S. research community, including natural history museums, botanical gardens, and other science centers, that have suffered significant budget disruptions resulting from reduced public attendance or closures associated with responding to the COVID–19 pandemic. Many natural history organizations are non-profits that operate on tight budgets with limited capacity to absorb abrupt and significant losses of revenue, such as that generated from public visitation and engagement programs.

In addition to appropriations, Congress is currently considering reauthorization legislation to significantly expand NSF's mission and budget. The proposed investments in technological research will enable the biodiversity collections community to build the cyberinfrastructure and databases necessary to mobilize biodiversity data in ways that bolster 21st century science and drive innovation. We applaud these efforts to invest in our Nation's scientific and technological enterprise and urge that robust investments also be made in basic and foundational research.

Thank you for your thoughtful consideration of this request and for your prior support of the National Science Foundation.

[This statement was submitted by John Bates, Ph.D., President.]

PREPARED STATEMENT OF THE NATURE CONSERVANCY

PROGRAMS UNDER THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION FOR FISCAL YEAR 2022

Chair Shaheen, Ranking Member Moran and Members of the subcommittee, thank you for the opportunity to comment on the fiscal year 2022 appropriations for the National Oceanic and Atmospheric Administration (NOAA). The Nature Con-

servancy (TNC) is a nonprofit working across the States and territories and in 72 countries to conserve the lands and waters on which all life depends.

We thank the subcommittee for its efforts to help address not only the Nation's ongoing vital ocean, coastal and Great Lakes issues but also the economic challenges of the COVID–19 pandemic. Investment in ocean, coastal and Great Lakes restoration and management can be part of the country's economic recovery. According to NOAA data, each year the U.S. ocean and coastal economy contributes $304 billion to the Nation's GDP and 3.3 million jobs. NOAA's funding keeps this growing ocean, coastal and Great Lakes economic engine running. It not only helps NOAA catalyze local and regional action but also reduces risk and saves money based on the tangible economic and societal benefits that natural resources provide.

We appreciate that in fiscal year 2021, the subcommittee was able to provide some moderate but necessary program increases in a constrained budget environment. Recognizing the significant benefit NOAA's programs provide to the Nation, the Biden administration has proposed a significant increase to the agency's fiscal year 2022 budget. Many of these increases are targeted to improve research, resource management and public engagement to address the considerable climate and biodiversity needs of the Nation. The demand for NOAA's products and technical and financial assistance exceeds available funding. TNC supports the administration's thoughtful approach to increases across NOAA programs. The NOAA budget levels detailed below represent a prudent investment in the United States' future, and your support is requested.

NATIONAL OCEAN SERVICE

Title IX Fund—National Coastal Resilience Fund Grants: The Conservancy supports the requested level of $68 million requests at least $5 million be set aside for planning, technical assistance, and assessment activities. The National Coastal Resilience Fund provides the resources and tools to build coastal resilience to avoid costly Federal disaster assistance and sustain healthy fisheries, maintain robust tourism opportunities, provide for increased shipping demands and support other coastal industries. Coastal communities have clearly shown an ability to match and leverage this funding to take proactive measures to protect their ways of life. TNC appreciates Congress's support for funding for planning and assessment activities in fiscal Year 2021.

Coastal Zone Management and Services: The Conservancy supports the requested level of $64.789 million. This level of funding will provide for increased capacity to provide coastal resilience technical assistance to communities across the country, including additional emphasis on under-resourced and underserved communities. Fully funding the Digital Coast Partnership following passage by Congress of the Digital Coast Act in 2020 will support new and improved products, services and technical assistance to communities through this public-private partnership. Funding would also support communities through the development of the next generation of coastal managers via the Coastal Management and Digital Coast Fellows programs. Providing competitive salaries and expanded recruitment efforts will enhance the ability to reach underrepresented communities. This increase will support the designation process for three new National Estuarine Research Reserves in Louisiana, Connecticut and Wisconsin to provide better representation and connectivity of habitats across the system.

Coastal Management Grants: The Conservancy supports the requested level of $108.5 million for coastal zone management grants. TNC collaborates with State and territorial coastal programs around the country to meet multiple goals for coastal communities, including economic development, enhancement of public access and recreation, coastal resilience, and conservation of coastal resources. After years of essentially flat funding, the additional funding would support State and territorial coastal zone management programs expanding coastal resilience efforts through vulnerability assessments, planning and design of resilience projects, monitoring and evaluation, technical assistance and training to local governments.

Coral Reef Conservation Program: The Conservancy supports the requested level of $43.194 million. The increase will help NOAA, States, territories and community, research, and non-governmental partners address the continued decline of coral reefs. This decline has had significant social, economic and ecological impacts on people and communities in the United States and around the world. TNC works with NOAA's Coral Reef Conservation Program under a competitively awarded, multiyear cooperative agreement to address the top threats to coral reef ecosystems: changing ocean conditions, overfishing and land-based sources of pollution. Together, TNC and NOAA develop place-based strategies, measure the effectiveness of management efforts and build capacity among reef managers.

National Estuarine Research Reserve System (NERRS): The Conservancy supports the requested level of $42.5 million. NERRS partners with States and territories to ensure long-term education, stewardship and research on estuarine habitats. The reserves advance knowledge and estuary stewardship and serve as a scientific foundation for coastal management decisions. By using local management needs to help shape research, NERRS aims to fill critical gaps. This funding would expand the capacity of NERRS to conduct climate research and monitoring, incorporate this research into training and technical assistance to local communities and enhance public engagement.

Sanctuaries and Marine Protected Areas: The Conservancy supports the requested level of $84.503 million. National marine sanctuaries support economic growth and hundreds of coastal businesses in sanctuary communities, preserve vibrant underwater and maritime treasures for Americans to enjoy and provide critical public access for more than 42 million visitors each year. Through a transparent, inclusive approach, the marine sanctuaries provide for the conservation of U.S. marine resources while balancing multiple uses and diverse stakeholder needs. The increased funding would enable the program to expand engagement of partners, underrepresented communities, Tribes and Indigenous communities; increase capacity for protection, conservation and stewardship; and support the designation process for five community-nominated candidate sites and Papahanaumokuakea Marine National Monument to become sanctuaries.

NATIONAL MARINE FISHERIES SERVICE (NMFS)

Fisheries and Ecosystem Science Programs and Services: The Conservancy supports the requested level of $170.603 million. Science is the foundation of successful fisheries management. While many gains have been achieved, there remain unfunded opportunities in each NMFS region, especially related to electronic monitoring and reporting (EM/ER). NMFS has also begun a fisheries information management modernization effort that would enhance capacity to take in, integrate and make accessible data from a variety of sources to improve management. Modernizing data management would support implementation of the proposed Climate-Ready Fisheries Initiative and enhance the government's ability to conduct offshore wind consultations. The enhanced research capacity would help fill gaps in stock productivity, fisheries adaptations, improve future projections and risk assessments and translate these efforts into management strategies to support decision-makers.

Habitat Conservation and Restoration: The Conservancy supports the requested level of $99.704 million. NOAA funding for coastal habitat restoration supports, on average, 15 jobs per $1 million invested and up to 30 jobs per $1 million spent on labor-intensive restoration projects. Project funds are awarded on a competitive basis and typically leverage the resources and capacity of multiple partners. This funding also provides for NOAA's consultations on and implementation of Essential Fish Habitat. The Regional Fishery Management Councils address fishing impacts on these areas, and NOAA must have sufficient capacity to provide technical assistance to the councils and to work with Federal agencies to avoid, minimize and mitigate impacts on these important fishery habitats. The proposed increase would support large-scale habitat restoration to build climate resilience as well as competitive grants for multi-year awards to develop restoration planning, project design and permitting and project implementation. TNC supports not only this project but the thoughtful approach to assess the problem, identify goals and articulate a schedule and cost for the project.

Fisheries Data Collections, Surveys and Assessments: The Conservancy supports the requested level of $197.645 million. Limited or poor-quality information on the status of fishery stocks undermines the effectiveness of fisheries management and can erode community support for conservation measures. Accurate and timely stock assessments are essential for the sound management of fisheries and the sustainability of fishing resources. The proposed increase would provide long-needed funding to expand surveys, sampling and analysis capabilities to better track shifting species. The funding would increase the use of technology to conduct surveys, a capacity that became increasingly important when the pandemic disrupted data collection. The increase would also begin implementation of a Federal survey mitigation program to cover the operational lifespan of offshore wind developments.

Fisheries Management Programs and Services: The Conservancy supports the requested level of $136.782 million. With a $214 billion fisheries and seafood sector, U.S. fishing communities rely on management services and information from NOAA to make the most informed decisions on where, how and when to fish. NOAA Fisheries has made important strides in addressing these challenges and strengthening fisheries management. Support for these efforts is necessary to recover fish stocks

so they can provide food and jobs now and in the future. Increased funding will enable NOAA to take the next steps to better incorporate ecosystem and changing climate considerations into management activities. It will also allow for workforce training and development in environmental justice and equity as well as improved engagement and outreach for diverse participation in regulatory and science processes. Funding would increase consultation capacity to assess effects of planned offshore energy activities and to establish a national Wind Center of Excellence to coordinate review of wind projects nationwide.

Observers and Training: The Conservancy supports at least $55.468 million, including $10.3 million for at-sea monitoring in the New England multispecies fishery, consistent with fiscal year 2021 funding. After several years of collaborative work with fishery participants, scientists and other stakeholders, the New England Fishery Management Council voted to increase monitoring on groundfish vessels to 100 percent for a period of at least 4 years if, and only if, funding is available to support it. Because of ongoing support from Congress to develop electronic monitoring systems, fishermen can now meet the at-sea monitoring requirement with these systems or observers. Continued funding along with leveraged private funding should provide sufficient resources to aid in the near-term transition to increased monitoring and expand the use of electronic monitoring.

Pacific Coastal Salmon Recovery Fund (PCSRF): The Conservancy supports at least $70 million, an increase of $5 million above fiscal year 2021 funding. PCSRF has funded hundreds of successful on-the-ground salmon conservation efforts, but habitat project needs exceed available funding. It invests in cooperative efforts and projects are matched at a 3:1 ratio (Federal: non-Federal). PCSRF has catalyzed thousands of partnerships among Federal, State, local and Tribal governments and conservation, business and community organizations.

Protected Resources Science and Management: The Conservancy supports the requested level of $237.127 million. Increasing funding for the competitive Species Recovery Grants would allow the agency to strengthen and expand State and territorial partnerships to address the growing number of listed species and allow for larger-scale, ecosystem-level recovery efforts. It will enhance capacity to integrate climate science into protected species management and assessments, including scenario planning, recovery planning, implementing recovery actions, threat projections and long-term monitoring and research. Additional listed species and emerging offshore wind activities have increased the number and complexity of NOAA's consultation and permitting requirements. Funding is needed to aid NOAA's ability to complete these requirements in a timely and predictable manner.

Thank you for this opportunity to share TNC's priorities. Please contact me if you have questions or would like additional information.

[This statement was submitted by Stephanie Bailenson, Senior Policy Advisor for Ocean and Coasts.]

PREPARED STATEMENT OF THE NEW HAMPSHIRE OFFICE OF THE CHILD ADVOCATE

SUBMITTED ON BEHALF OF A COALITION LED BY YOUTH FIRST INITIATIVE AND COLUMBIA JUSTICE LAB'S YOUTH CORRECTIONAL LEADERS FOR JUSTICE—REGARDING A NEW JUVENILE JUSTICE INITIATIVE AT THE OFFICE OF JUVENILE JUSTICE AND DELINQUENCY PREVENTION IN THE DEPARTMENT OF JUSTICE

Chairwoman Shaheen, Ranking Member Moran, and Members of the subcommittee, my name is Moira O'Neill. I serve as the Child Advocate for the State of New Hampshire. The Office of the Child Advocate provides independent oversight of all State supervised services for children with a special focus on child protection and juvenile justice services. In addition to investigating complaints and examining State systems, our statutory mandate includes promoting children's best interests and strengthening State services by working with agencies and providing advice to policy makers. The foundation of all our efforts is the science of child development. This approach is essential to juvenile justice, a separate system that should accommodate children's developing brains and capacity for executive decision making, impulse control, and emotional regulation. I am pleased to submit testimony on behalf of a coalition of organizations, co-led by the Youth First Initiative and Columbia Justice Lab's Youth Correctional Leaders for Justice. These organizations assist States in building on the past 15 years of successful youth crime reduction and decarceration to strengthen and expand access to more effective community-based alternatives for youth. *To accomplish this goal, we seek $100 million for a new initiative at the Office of Juvenile Justice and Delinquency Prevention (OJJDP) in the Department of Justice* that would support State efforts to:

—*Engage in a planning and stakeholder consultation process to close youth prisons, repurpose closed youth prisons, and reinvest State resources from those facilities to support more effective and cost-efficient community-based alternatives; and*

—*Provide support for workforce development services for correctional staff who will need new employment upon facility closures.*

I want to thank the subcommittee for its past funding of Federal juvenile justice programs and urge it to support this new initiative at OJJDP to support States in moving from costly and ineffective incarceration to more effective community-based alternatives that produce dramatically better outcomes for youth, their families, and their communities.

The time for transforming juvenile justice is now and New Hampshire is ready. We are a small State with under 2,000[1] children—less than 1 percent of an estimated 260,000 population under 18[2]—who are adjudicated delinquent at any given time of the year. Despite the small size of the population, there are disparities and children at risk. Children of color are just 16 percent of the State population but account for 37 percent of detention admissions, 22 percent of new probation cases, and at least 22 percent of out of home placements.[3] *Children with disabilities also are disproportionately represented with an estimated 65–70 percent having a diagnosed disability and 75 percent having experienced some form of trauma, which impacts healthy development.*

With these outcomes in mind and armed with the latest science for practice improvement, New Hampshire is experiencing extraordinary progress in transforming juvenile justice services under a broad, bipartisan group of champions. We are in the midst of implementing significant investments in a responsive and trauma-informed mental health system for children. We are transforming juvenile probation from a punitive and ineffective system to a child development-informed system that will emphasize positive youth development and incentivize pro-social behavior. *Moreover, the Granite State has succeeded in minimizing the number of detained or committed children through legislative actions increasingly limiting criteria for incarceration. The General Assembly has just passed a 2022–23 biennium budget that provides for the closure of our 144-bed children's prison, currently housing 10–15 children, by March 2023.* This is promising progress in children's best interest. New Hampshire has momentum. However, overall success will depend upon careful planning and assessment for community-based alternatives to intervene, rehabilitate, and prevent children from engaging in anti-social behavior. A promise to support staff in prison transition, not currently in the budget, would go far to keeping children safe until closure. *The requested $100 million for a new Federal initiative at OJJDP would galvanize and support New Hampshire's efforts to ensure a truly successful and just system.*

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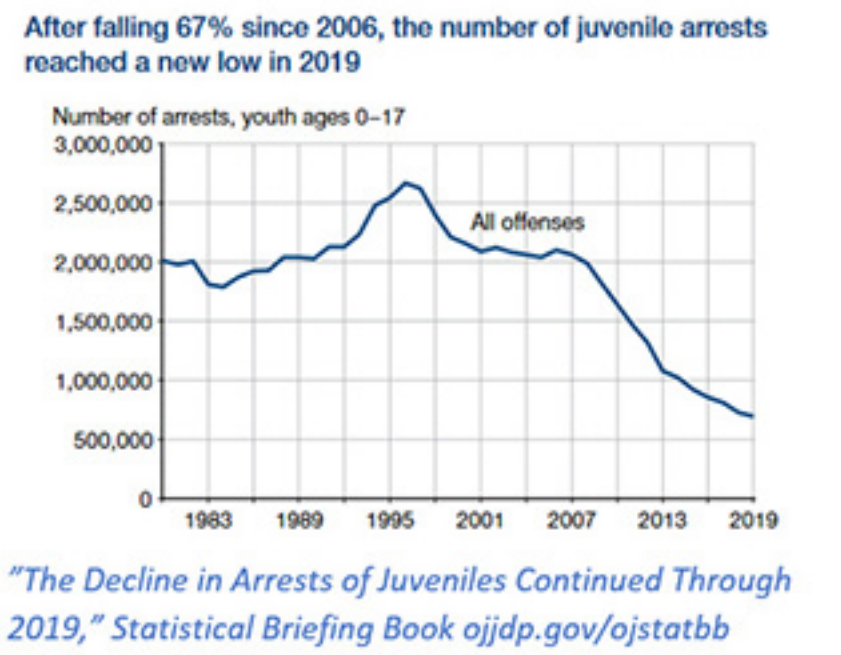
[1] https://www.dhhs.nh.gov/dcyf/documents/dcyf-data-book-2020.pdf

[2] https://www.census.gov/quickfacts/NH

[3] Division for Children, Youth and Families Probation Transformation Team, State of New Hampshire Department of Health and Human Services. 2021.



Nationwide, from 2000 to 2018, *the number of incarcerated youth fell by 65 percent,* and juvenile justice facilities *decreased by 50 percent. During this time youth crime also dropped.* From 2006 to 2019, juvenile arrests for *violent crimes fell by 50 percent,* and from 2008 to 2019, juvenile arrests for *property crimes fell by 73 percent.*

Racial and ethnic disparities and incidents of abuse continue to plague these extremely expensive and ineffective prison environments. Racial inequities in incarceration are pervasive—*Black youth are 5 times more likely and Latinx youth 3 times more likely than their white peers* to be incarcerated for similar offenses. Excluding Indian Country, American Indians make up 3 percent of girls and 1.5 percent of boys in juvenile facilities but less than 1 percent of youth nationally.

Long term outcomes for incarcerated youth are poor and include lower educational attainment and employment; high rates of homelessness; behavioral and emotional problems; poor physical health; and problems in forming stable family relationships. Physical and sexual assault and extended solitary confinement also are common. Incarceration also increases recidivism by disconnecting youth from their families, religious and spiritual connections, schools, and other pro-social experiences. As a result, *incarcerated youth are more likely to have entered adult prison by age 25.* Given these limitations, many prosecutors, youth correctional administrators and youth advocates now recommend the closure of youth prisons in favor of more effective community-based alternatives. *However, there are many youth prisons still operating and taking up precious State resources, especially during this time of strapped State budgets.* Federal funds would assist States in closing youth prisons and directing State and local resources to support more effective community-based alternatives.

Research shows that community-based alternatives perform far better than the youth prison model. The youth incarceration environment is incongruous with child development and trauma-informed care that relies upon stimulating, engaging, encouraging, and safe space for children's intellectual capacity and resilience to develop. I will never forget the boy at the Sununu Youth Services Center who told me, "I feel my brain rotting in here." He was right.

There are effective alternatives to youth incarceration. Community mentoring programs that link young people to trusted adults show strong results. In Pennsyl-

vania, Youth Advocates Program found that 97 percent of program participants were not convicted or adjudicated of a new offense while in the program, 85 percent were living safely in the community at discharge, and 76 percent were regularly attending school, had graduated, or attained their GED at discharge. The NYC Mayor's Office and Urban Institute found that Credible Messengers' mentoring programs for youth on probation significantly reduced recidivism for young adults on probation by 69 percent after 12 months. At the 24-month mark, it was still 57 percent lower. These results show that evidence-based alternatives delivered in the community can reduce recidivism.

During the COVID–19 pandemic, incarceration has put youth at serious risk for illness, including long-term health impacts, and sometimes death. While not specific to youth prisons, as of December 2020, the rate of people incarcerated in prisons who tested positive for COVID–19 was more than 4 times as high as the general population and in some States up to 8 times as high. It is likely that youth prisons have similarly high rates of COVID–19 infection, putting in jeopardy the health of young people and staff in those settings, as well as the health of their families and communities to which they return.

Closing youth prisons both saves money and increases public safety. The cost of youth incarceration is astronomically high, especially considering these poor outcomes. According to one recent study, the average cost of the most expensive confinement option for a young person in 48 States was *$588 per day, or $214,620 per year. In New Hampshire, the Sununu Youth Services Center costs taxpayers $12 million to $15 million per year to accommodate 10–15 children* on any given day. A Washington State Study showed that youth detention produced fewer benefits in reduced crime and other outcomes than many less costly programs. For example, spending $1 for diversion and mentoring programs resulted in $3.36 in benefits of reduced crime, while multisystemic therapy, a more service intensive alternative, produced $13.36 in benefits.

In 2016, Kansas decided to shift resources from youth prisons to community-based interventions, and this shift is expected to save $72 million by 2022. The State has invested savings in community-based programs. Georgia also instituted a similar plan in 2012 and estimated its savings over 5 years at *$85 million.* It also avoided the significant cost of building two new juvenile facilities.

Such community-based alternatives, including mentoring programs, evidence-based therapies, and small, rehabilitative and home-like facilities for the very few young people who commit serious crimes cost much less than prison and are safer for youth and staff. New York City's investment in small, homelike facilities resulted in a *53 percent drop in youth arrests and a 68 percent reduction in youth placement.* Using similar reforms, *Texas decreased youth incarceration by 38 percent and further decreased youth arrests by 49 percent.* After California's closure of youth prisons in 2016, youth arrests for violent crimes in the State fell to less than half what they were in 1990. These States have demonstrated that closing youth prisons both saves money and increases public safety.

Americans nationwide support Federal funding to incentivize States to close youth prisons to capture resources to reinvest in more effective and cost-efficient community-based alternatives. In a recent Youth First Initiative poll, *78 percent of adults endorsed the proposal* to provide Federal funds for State planning and consultation with stakeholders to close youth prisons and invest savings to expand access to community-based alternatives and provide workforce development services to workers from closed facilities. At least 7 in 10 Democrats, Independents, and Republicans, and at least 7 in 10 Black, white, Hispanic, and Asian Americans endorsed these policies, demonstrating support across political affiliation as well as racial and ethnic groups.

Youth First Initiative polled residents in Maine and found that *85 percent of residents overwhelming favor a youth justice system focused on prevention and rehabilitation* over punishment and incarceration. Additionally, *87 percent of Mainers support providing financial incentives for States to invest in alternatives to youth incarceration.* Just recently, the Maine House and Senate passed legislation to close its only youth prison, Long Creek Youth Development Center. The legislation also requires that savings captured from the closure be used to create and support community-based programs in Maine.

At a time when our Nation is debating how to reduce the negative impacts of the justice system while still maintaining public safety, I urge you to support this proposal since it provides a winning strategy that would accomplish all of the key goals: reducing incarceration and its negative impacts on youth; reducing racial disparities; achieving cost efficiencies that produce more effective outcomes; and improving public safety.

Thank you so much for your time and consideration of these critical issues. Please do not hesitate to contact me or Jenny Collier at jcollier@colliercollective.org if you have any questions or need additional information.

[This statement was submitted by Testimony by Moira O'Neill, PhD, The Child Advocate.]

PREPARED STATEMENT OF NONPROFIT CIVIL AND HUMAN RIGHTS ADVOCACY AND RELIGIOUS ORGANIZATIONS

FUNDING TO THE DEPARTMENT OF JUSTICE FOR EFFORTS TO PREVENT, MEASURE, AND MITIGATE THE HARM DONE BY HATE CRIMES

June 22, 2021

The Hon. Jeanne Shaheen, Chair
Commerce, Justice, Science
Subcommittee
Senate Appropriations Committee
125 Hart Senate Office Building
Washington, DC 20510

The Hon. Jerry Moran, Ranking Member
Commerce, Justice, Science
Subcommittee
Senate Appropriations Committee
142 Dirksen Senate Office Building
Washington, DC 20510

DEAR CHAIR SHAHEEN, RANKING MEMBER MORAN, AND MEMBERS OF THE SUBCOMMITTEE:

As organizations that represent communities targeted by hate incidents ranging from vandalism and verbal harassment to life-threatening attacks, we write to urge you to increase funding in the fiscal year 2022 Commerce-Justice-Science appropriations bill for community-based non-profits that provide holistic education and support services to mitigate the harm hate causes; for grants that improve data about and understanding of hate; and for restorative justice research and Community Relations Service interventions that address the roots of hate-motivated violence.

Our recommendations are grounded in our alarm at increases in reports of hate crime, and in our conviction that to further racial justice we must ensure that government agencies and nongovernmental organizations work together to support, validate, and vindicate each person and community at risk of being targeted because of race, national origin, religion, gender, gender identity, sexual orientation, or disability. As you know, in spite of declining law enforcement agency participation, the FBI's Hate Crime Statistics Act reports have documented year-to-year growth in the number of recorded hate crimes in recent years, culminating in the most deadly year on record in 2019, in which at least 51 people lost their lives in bias-motivated attacks. Anecdotal data captured by community-based organizations and surveys that ask Americans about their subjective experiences indicate that hate crime is a far more widespread and devastating phenomenon than even the FBI's report demonstrates. Behind each victim is an entire community of people who share the characteristics for which the person was attacked, and who experience the fear and instability that these acts cause.

Mitigating and preventing the enormous harm that bias-motivated violence does is necessary if we are to dismantle deep systemic inequities that have impeded our growth and achievement throughout American history. Moreover, at a time when our differences and conflicts threaten our ability to collaborate with one another to sustain democratic governance and protect public health, it is as important as ever that we stand up to hate and create an environment in which all of us are equally safe and empowered to thrive. We urge you to further these crucial efforts by adopting the following appropriations provisions and report language.

Increase Funding for Community-Based Anti-Hate Work

When hate incidents occur, the people, institutions, and communities that are affected often turn first for assistance and support to familiar and trusted organizations that work outside the criminal justice system to provide legal advice and defense, culturally-appropriate medical and mental health care, and other complementary services such as anti-bias education and help with basic needs. Strong indicators of the important role that community-based nonprofits play in documenting, countering and mitigating hate include the significant volume of hate incidents reported directly to organizations and associations such as Stop AAPI Hate, the Southern Poverty Law Center, and the Anti-Defamation League, and the proliferation in recent years of programs and partnerships that aim to call out, and accel-

erate the fight against, hate, such as the Lawyers Committee for Civil Rights Under Law's James Byrd Jr. Center to Stop Hate. The Federal Government's investments in preventing and supporting healing from hate crimes must reflect the unique and indispensable role of non-government actors through a movement toward greater parity in distribution of funding to both community-based and government-run institutions. Therefore, we urge you to adopt the following report language:

"Department of Justice—Office of Justice Programs—'COMMUNITY SUPPORT FOR VICTIMS OF HATE CRIME.—The Committee recognizes that individuals and communities that perpetrators of hate crimes target are frequently the same individuals and communities that have been historically discriminated against and overrepresented among those investigated, arrested, convicted and incarcerated by law enforcement officials. Hate crime victims include noncitizens and people with immigrant family members who may fear immigration enforcement-related consequences of contact with law enforcement. For these and other reasons, communities affected by hate crime have called for increased investment in community-based social support and advocacy for victims as a necessary complement to law enforcement involvement in preventing and responding to hate crime. Accordingly, the Committee directs the agency to prioritize grants from programs for which institutions of higher education, museums, and nongovernmental nonprofit organizations are eligible to those applicants that are institutions of higher education, museums, and nonprofit organizations that propose to use funding to provide services that reduce the risk of hate crime or to provide legal, material, social, and other support to people and institutions affected by hate crimes. The agency should consider grant programs including but not limited to the Antiterrorism and Emergency Assistance Program, the Byrne Criminal Justice Innovation Program, Research and Evaluation on Domestic Terrorism Prevention, and Research and Evaluation of Services for Victims of Crime.'"

Fund Improvements in Hate Crime Statistics

A more complete understanding of where, when, and against whom hate crimes occur is a necessary component of an effective and coordinated campaign to eradicate this scourge. In the nearly 30 years during which the FBI has compiled data pursuant to the Hate Crime Statistics Act, however, DOJ has yet to produce information that paints an accurate and comprehensive picture of hate crime. Multiple factors contribute to deficits in our knowledge about this phenomenon, including victimized communities' distrust and avoidance of law enforcement agencies; lack of training for officers in recognizing and investigating bias motivations; and frontline agencies' limited capacity to maintain and share records with DOJ combined with the lack of a reporting mandate. Congress can and must support stakeholders in overcoming these challenges by providing funding for data improvement programs authorized by the Jabara-Heyer NO HATE Act. To implement this priority legislation, we urge you to provide total funding of at least $15 million in the Commerce-Justice-Science Appropriations bill for grant programs to State, local, and Tribal law enforcement agencies to implement the National Incident-Based Reporting System, to create State-run hate crime reporting hotlines, and to conduct training and develop protocols for identifying, analyzing, investigating and reporting hate crimes. In addition, we urge you to adopt the following corresponding report language:

"DOJ—State and Local Law Enforcement Assistance: 'HATE CRIME STATISTICS REPORTING IMPROVEMENT.—The Committee is concerned that more than two thousand law enforcement agencies did not participate in the FBI's most recent compilation of statistics about hate crimes, including 10 agencies serving cities with populations greater than 100,000. In addition, underreporting of hate crime by participating agencies leads to an exponential gap between the number of hate crimes victims report experiencing in the National Crime Victimization Survey, and the number of hate crimes recognized and reported by law enforcement. Missing reports impair the ability of public safety officers and civil society to prevent and respond to hate crime. The Committee looks forward to receiving the report required in Sec. 5(g) of the COVID–19 Hate Crimes Act, Public Law 117–13, and to obtaining a better understanding of ways that DOJ can support law enforcement agencies in strengthening hate crime data collection and reporting, and more effectively meeting the needs of communities affected by hate crime.'"

Increase Support for Eliminating Hate by Ramping Up Peacebuilding and Advancing Restorative Justice

To secure a nation free from the fear and division that hate incidents cause, DOJ and other stakeholders must further develop ability and capacity to challenge the prejudices that lead to attacks. Within the agency, this work should start with and

be led by an empowered and better-resourced Community Relations Service. This body's efforts are symbolically important and practically effective. As Liz Hume and Theo Sitther of the Alliance for Peacebuilding wrote in The Hill on March 17, 2021, "CRS has brokered agreements that have resolved underlying systems of injustice and division in communities experiencing high levels of conflict." Recognizing that CRS's interventions save lives and preserve community cohesion, we urge you to take its work to scale and increase CRS's annual funding to $40 million to meet expanding demand resulting in part from COVID–19-related hate crimes targeting AAPI individuals and institutions, and from accelerating hate incidents inspired by international affairs that have targeted Jews, Muslims, and members of other faith-based and immigrant communities. We recommend adoption of the following report language in support of CRS's work:

"DOJ—Salaries and Expenses, Community Relations Service: 'COMMUNITY RELATIONS SERVICE.—The Committee recommends $40,000,000 for the Community Relations Service (CRS). CRS has a unique and important role to play in complementing the Justice Department's law enforcement activities, particularly when those activities involve members of vulnerable and marginalized communities. CRS is charged with pursuing justice and reconciliation throughout all of the States and territories, by engaging crime victims, government agencies, civil rights groups, and community leaders in healing and conflict resolution. CRS concentrates on developing mutual understanding in communities most challenged by tension and helps them develop local capacity and tools to prevent hate crimes from reoccurring. The Committee expects these efforts to expand, and CRS's services to be offered in more communities, in Fiscal Year 2022.' "

Moreover, we implore you to acknowledge that members of communities targeted by perpetrators of hate crimes have themselves suffered from disproportionate surveillance and criminalization by the criminal justice infrastructure. As a result, many fear that punitive anti-hate crime policies are likely to be misused against marginalized communities, and question whether traditional punishment is the best possible means of redressing hate crime in a way that challenges offenders' beliefs and gives pause to others who may express or act on hate. Instead, alternatives to carceral sentencing, which might include educational and community service requirements or moderated conciliation and dispute resolution sessions, hold promise as a means of advancing stakeholders' interests and helping victims heal and regain confidence. Further study is needed to determine which interventions have a successful track record or have shown promise in experimentation, so we hope that you will reserve at least $5 million of the funding provided to the Office of Justice Programs for Research, Evaluation, and Statistics for evaluation and development of restorative justice programming, and adopt the following report language:

"Research, Evaluation and Statistics: 'RESTORATIVE JUSTICE RESEARCH.—The Committee recognizes that many members of communities targeted by hate crimes have also been disproportionately negatively affected by a criminal justice system suffused with institutional racism and prejudice against other minority communities. As a result, a number of victims of hate crimes advocate responses to bias-motivated attacks that do not involve only or primarily carceral or punitive measures. The Committee notes the dearth of studies that evaluate the effectiveness of restorative justice alternatives to criminal punishment for commission of a hate crime, and directs the Department to fund and conduct research that can inform the adoption of sentencing alternatives that best serve hate crime victims' needs. The Department is encouraged to partner with academic institutions to evaluate the effectiveness of existing programs that employ conciliation, education, and other interventions to disrupt the malign beliefs of people convicted of hate crimes' "

We appreciate your consideration of these requests and look forward to working with you to ensure that fiscal year 2022 appropriations advance the fight against hate in ways that best serve the needs of communities that are targeted because of members' race, ethnicity, national origin, religion, gender, sexual orientation, gender identity, and disability. If you have questions about these recommendations or seek additional information, please contact Erin Hustings at ehustings@adl.org and 202–316–3086.

Sincerely,

ACCESS (Arab Community Center for Economic and Social Services)
Act To Change
American Jewish Congress
Anti-Defamation League
B'nai B'rith International
Interfaith Alliance
Japanese American Citizens League

Jewish Council for Public Affairs
Matthew Shepard Foundation
National Council of Jewish Women
Not In Our Town
Rabbinical Assembly
Sikh Coalition
UnidosUS
Union for Reform Judaism
UNITED SIKHS

PREPARED STATEMENT OF NONPROFIT VOTER ASSISTANCE, CIVIL RIGHTS, AND RELIGIOUS ORGANIZATIONS

June 18, 2021

The Hon. Jeanne Shaheen, *Chair*
Commerce, Justice, Science Subcommittee
Senate Appropriations Committee
125 Hart Senate Office Building
Washington, DC 20510

The Hon. Jerry Moran, *Ranking Member*
Commerce, Justice, Science Subcommittee
Senate Appropriations Committee
142 Dirksen Senate Office Building
Washington, DC 20510

DEPARTMENT OF JUSTICE'S VOTING SECTION

DEAR CHAIR SHAHEEN, RANKING MEMBER MORAN, AND MEMBERS OF THE SUBCOMMITTEE:

The undersigned organizations write to strongly urge you to designate increased funding for DOJ's Civil Rights Division for the addition of positions in the Voting Section to enforce the Voting Rights Act's protections against discrimination in elections. As advocates for full and equal participation in American democracy, we are alarmed by the accelerating adoption of State and local policies that make voting disproportionately more difficult for members of communities that have historically been the subject of blatant and targeted disenfranchisement efforts. There is no other entity that can as ably represent the interests of voters of color and voters from language minority communities with the authority, expertise, and deep resources available to DOJ, and so we call on Members of Congress to ensure that the agency has what it needs to rise to the present challenge and preserve the broad access to the ballot that our foundational civil rights laws promise.

Before, during, and after the 2020 Presidential Election, disinformation about threats to election security and integrity spread widely, and in significant part due to some public figures' repeated critiques of procedures that are normal and familiar, such as mail voting, and of extraordinary measures undertaken to avoid COVID–19-related perils, including proactive mailing of mail ballot applications and expansion of early voting hours and periods. Election administrators, Federal and international experts at agencies like the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency, and independent audits of paper records of votes cast have all affirmed that election results were valid and no significant or widespread fraud or irregularities occurred. Nonetheless, according to the Brennan Center for Justice, as of April 1, 2021, State lawmakers had introduced 361 bills that would restrict access to the ballot in 47 States' 2021 legislative sessions.

These measures take direct aim at aspects of the voting process that disproportionately affect voters of color and language minority voters, and preserving equal access to elections in 2021 and beyond will depend upon the strength and readiness of the most capable and expert voting rights prosecutor in the Nation, the Civil Rights Division's Voting Section. For example, Georgia recently signed into law a bill that expands voter identification requirements, which Black, Latino, Native American, and other voters of color are disproportionately likely to be unable to meet and to perceive as a barrier to voting; the bill also makes it a crime to approach voters waiting in line to give them food or water, and restricts the use of ballot drop boxes for mail voters. Iowa enacted a bill that shortens the State's early voting period and polling place hours, and restricts the use of satellite voting sites, all flexibilities that have proven particularly important to the State's growing population of young Latino voters, according to LULAC Iowa Political Director Joe Henry. Utah adopted a change that streamlines the process for cancelling voter registration records based on a voter's apparent death, opening the door to striking living people who share names with deceased individuals from voter rolls without notice. Such a policy is very likely to harm historically marginalized voters, who are

statistically more likely to share the same surnames, and to be mistakenly removed from registration lists, than are white voters.

DOJ's Voting Section requires expanded capacity to respond to the States and localities that already have and are poised to follow suit, as well as to monitor, evaluate, and enforce anti-discrimination standards in the post-2020 Census redistricting process that will soon begin in virtually every State and municipality in the Nation. As you know, the redistricting cycle that approaches will be the first to occur in the absence of the protective mechanisms of the Voting Rights Act's fully-functional preclearance process. As a result, the Voting Section will not receive explanation and analysis of new district maps from jurisdictions with long histories of acting deliberately to limit marginalized voters' opportunity to elect representatives of their choice, and will instead have to exponentially increase its own original review of as many as hundreds, or thousands, of new plans. It cannot afford to reduce its efforts to identify and challenge discriminatory redistricting, knowing that the process of redrawing districts has uniformly been infected with intentional bias and produced inequitable results when left to its own devices. In the last two cycles of redistricting during which the Voting Rights Act was in full effect alone, DOJ objected at least 42 times to implementation of redistricting plans that would have disproportionately diminished the influence of voters of color and language minority voters.

As we consider the work before the Voting Section, we are also mindful of the need for more capacity to ensure the effective implementation of Section 203 of the Voting Rights Act after new coverage determinations are published in calendar year 2021. In light of the continued growth of language minority communities, we anticipate the extension of obligations to conduct elections in multiple languages to additional jurisdictions, and along with it, an increase in demand for DOJ's technical assistance and oversight. In our experience, newly-covered municipalities in particular often struggle to understand and comply with requirements such as recruitment and training of multilingual pollworkers, education of monolingual pollworkers about the rights of voters who are not fully fluent in English, and customized translation of not only ballots and instructions but also key assets such as websites and polling place signage. The volume of the Voting Section's historical language assistance enforcement actions also attests to the frequency with which election administrators and elected officials experience challenges and require added assistance or pressure, or both, to provide the materials and interpretation that the law requires.

Taking into consideration these acute needs, we urge you to provide at least $5 million in additional funding for General Legal Activities at DOJ, and to designate the increase for the purpose of adding positions in the Voting Section dedicated to Voting Rights Act enforcement. We also ask that you adopt the following explanatory report language:

DOJ—Salaries and Expenses, General Legal Activities: "VOTING RIGHTS ACT ENFORCEMENT.—The Committee is concerned that multiple factors including the effects of the Supreme Court's decision in *Shelby County v. Holder;* the increasing proposal and adoption of discriminatory restrictive State and local voting policies following the 2020 Presidential Election; and ongoing need for negotiation of agreements that ensure compliance with Section 203 of the Voting Rights Act (VRA) will require the Voting Section of the Civil Rights Division to undertake an increased caseload of resource-intensive litigation to meet its responsibility under the Voting Rights Act to ensure equal access to elections regardless of race, ethnicity, and linguistic ability. The Committee recommends an increase of not less than $5,000,000 for additional expenses relating to the enforcement of Sections 2, 4(e), 5, 10, 11, 203, and 208 of the VRA (52 U.S.C. §§ 10301–10311; 10503–10505; 10508)."

We appreciate your consideration of these recommendations, and encourage you to contact Erin Hustings at ehustings@adl.org and 202–316–3086 if we may provide any additional information.

Sincerely,

American Association of People with Disabilities
Anti-Defamation League
Asian American Legal Defense and Education Fund (AALDEF)
Asian and Pacific Islander American Vote
Autistic Self Advocacy Network
The Brennan Center for Justice at NYU School of Law
Center for Common Ground
Coalition on Human Needs
Common Cause
Congregation of Our Lady of Charity of the Good Shepherd, U.S. Provinces
Democracy North Carolina
Demos

End Citizens United/Let America Vote Action Fund
Fair Elections Center
Faith in Public Life
Faith in Public Life Action Fund
Franciscan Action Network
Government Accountability Project
Human Rights Campaign
Lawyers for Good Government (L4GG)
Leadership Conference of Women Religious
League of Women Voters of the United States
Missouri Voter Protection Coalition
National Action Network (NAN)
National Advocacy Center of the Sisters of the Good Shepherd
National Association of Councils on Developmental Disabilities
NALEO Educational Fund
National Coalition on Accessible Voting
The National Coalition on Black Civic Participation
National Council of Jewish Women
National Council on Independent Living
National Urban League
NETWORK Lobby for Catholic Social Justice
Ohio Voter Rights Coalition
People for the American Way
Rock the Vote
SPLC Action Fund
State Voices
Texas Progressive Action Network
UFCW International Union
UnidosUS
Union for Reform Judaism
Unitarian Universalists for Social Justice

PREPARED STATEMENT OF THE NORTHWEST INDIAN FISHERIES COMMISSION

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

Chair Shaheen, Ranking Member Moran and Honorable Members of the subcommittee, my name is Lorraine Loomis and I am the Chair of the Northwest Indian Fisheries Commission (NWIFC). The NWIFC is composed of the 20 Tribes that are party to *United States v. Washington,* which upheld the Tribes' treaty-reserved right to harvest and manage various natural resources on and off-reservation, including salmon and shellfish. On behalf of the NWIFC, I'm providing testimony for the record on the natural resources and fishery management program funding requests for the National Oceanic & Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS) Fiscal Year 2022 appropriations. These programs support the management of salmon fisheries, which contribute to a robust natural resource-based economy and the continued exercise of Tribal treaty rights to fish. In light of the past year's extreme difficulties, it is now more important than ever that the Federal trustee support management, supplementation, and restoration of fisheries—paramount to the Tribes physical, cultural and economic wellbeing, as well as an important link in our Nation's food supply chain.

SUMMARY OF FISCAL YEAR 2022 APPROPRIATIONS REQUESTS

—$70.0 million plus for NOAA Pacific Coastal Salmon Recovery Fund
—$7.0 million for NOAA Hatchery Genetic Management Plans
—$43.5 million for NOAA Pacific Salmon Treaty
—$26.5 million for NOAA Mitchell Act Hatchery Programs
—Continued Support for NOAA Fisheries Disaster Assistance Program

The member Tribes of the NWIFC ceded much of the land that is now western Washington in exchange for reserving the continued right to harvest and manage various natural resources including salmon and shellfish. Salmon are the foundation of Tribal cultures, traditions and economies in western Washington. To ensure that Tribal treaty rights and lifeways are protected, it is essential that the Federal Government provide support to all aspects of salmon management including harvest planning and implementation (e.g. Pacific Salmon Treaty), hatchery production, (e.g. Mitchell Act Hatchery Programs and Hatchery Genetic Management Plans) and habitat protection and restoration (e.g. Pacific Coastal Salmon Recovery Fund).

JUSTIFICATION OF REQUESTS

—*Provide, at a minimum, $70.0 million for NOAA Pacific Coastal Salmon Recovery Fund (PCSRF) and preferably restore funding to fiscal year 2002 levels ($110.0 million)*

We respectfully request, at a minimum, $70.0 million for PCSRF, an increase of $5.0 million over the fiscal year 2021 enacted level. It is worth noting that this re-

quest is a significant departure from the PCSRF peak level of $110.0 million in fiscal year 2002 or subsequent years in which budget authority was maintained upwards of $80.0 million through fiscal year 2011. We ultimately would like to see PCSRF funding fully restored to fiscal year 2002 levels. This level of funding would help carry out the original congressional intent of these funds to support the Federal Government's obligations to salmon recovery and the treaty fishing rights of the Tribes.

The PCSRF is a multi-State, multi-Tribe program established by Congress in fiscal year 2000 with a primary goal to help recover dwindling salmon populations throughout the Pacific coast region. Through PCSRF, Tribes work collaboratively to help protect and restore salmon habitat in an effort to increase natural salmon productivity. To accomplish this, Tribes implement scientifically based salmon recovery plans developed for each watershed in concert with Federal, State, and local partners. Tribes also participate in sustainable harvest management activities such as monitoring of fish abundance, which is then used to forecast adult returns and subsequently develop annual harvest rates that achieve conservation objectives and provide for Tribal and non-Tribal harvest opportunities. Since its inception, PCSRF has been the primary salmon recovery response. This has resulted in the restoration and protection of over 1.1 million acres of spawning and rearing habitat and re-established salmon access to more than 11,980 miles of previously inaccessible streams in our region.

—*Provide $7.0 million for NOAA Hatchery Genetic Management Plans (within Pacific Salmon), including $2.0 million for implementation*

We respectfully request $7.0 million to expedite NMFS's review and approval of the backlog of western Washington Hatchery Genetic Management Plans (HGMPs) and, at a minimum, $2.0 million of that funding directed toward implementation of those plans that are now approved. We recommend that the Pacific Salmon line be funded at no less than $69.0 million, which is $2.0 million above fiscal year 2021 enacted level of $67.0 million to accommodate these requests, while ensuring maintenance of existing programs under this line. We also request an explanatory statement clarifying that program funding may be used to pass-through to, or contract with Tribes to implement those plans that are already approved. Review and approval of HGMPs is necessary to provide hatcheries with ESA coverage and implementation of the plans is necessary to accomplish their conservation goals.

NMFS uses the information provided by HGMPs to evaluate the impacts of State and tribally operated hatcheries on salmon and steelhead listed under the ESA and recommends improvements to operations to meet conservation objectives. With the lack of improvement in salmon stocks, hatchery operations have become even more important to achieving recovery goals and maintenance of salmon fisheries. However, the lack of improvement in natural origin salmon has also resulted in scrutinizing hatcheries for their potential genetic impacts on natural spawning populations. This has resulted in increasingly specific performance standards and management expectations included in Tribes' HGMPs. Tribes need help addressing the escalating costs of hatchery management associated with the monitoring and adaptive management practices called for by HGMPs. For example, requirements to closely monitor natural and hatchery produced salmon interactions on the spawning ground are costly and time-intensive. Therefore, it is essential that HGMP funding is increased to address these rising costs and that flexibility is provided to ensure that funding can be used to implement the plans' recommendations, which both the Federal Government and Tribes have extensively invested in.

—*Provide $43.5 million to implement the National commitments in the renegotiated Pacific Salmon Treaty agreements (within NOAA Salmon Management Activities)*

We support the Pacific Salmon Commission (PSC) U.S. Section's fiscal year 2022 request of $43.5 million within Salmon Management Activities, an increase of $4.0 million over the fiscal year 2021 enacted level of $39.5 million. This line item includes annual operational costs of $5,850,000 for Sound Science, $13,460,000 for hatchery conservation programs and habitat restoration for Puget Sound critical stocks and $5,540,000 to increase prey availability for southern resident killer whales.

The fiscal year 2022 request would support implementation of the National commitments in the recently renegotiated Pacific Salmon Treaty (PST) Annex Chapters. The recommended funding also helps meet the requirements of the biological opinion for listed species and supports effective, science-based implementation of negotiated salmon fishing arrangements and abundance-based management approaches

for Chinook, southern Coho, and Northern Boundary and Transboundary River salmon fisheries.

Adult salmon returning to most western Washington streams migrate through U.S. and Canadian waters and are harvested by fishers from both countries. For years, there were no restrictions on the interception of returning salmon by fishers of neighboring countries. Eventually, the U.S. and Canada agreed to cooperate on the management of salmon by developing and ratifying the PST in 1985. The PSC was created to implement the PST and is responsible for developing management recommendations and assessing compliance with the treaty. Negotiations to revise the provisions of the Annex Chapters were successfully completed in 2018 and 2019. These chapters contain the specifics for implementing the treaty for each species in each geographic area. These revised chapters represent the combined efforts of the participants to ensure healthy salmon populations for the next 10 years, and as such include commitments from the U.S. to improve current management strategies.

—Provide $26.5 million for NOAA Mitchell Act Hatchery Programs (within Salmon Management Activities)

We respectfully request $26.5 million for the Mitchell Act Hatchery Programs, an increase of $4.5 million over the fiscal year 2021 enacted level of $22.0 million. The request for this additional increase in Mitchell Act funds is to ensure that mitigation hatcheries operate at full production level to meet Federal obligations. This program is funded through the Salmon Management Activities subactivity.

Mitchell Act hatchery production is intended to mitigate for fish and habitat loss caused by the Federal hydropower dam system on the Columbia River. Funding for these programs supports the operation and maintenance of hatcheries that release around 40 million juvenile salmon and steelhead in Oregon and Washington. Adequate funding for Mitchell Act hatcheries is of particular importance to us because it supports salmon production for Tribal treaty harvest along the Washington coast. Additionally, adequate funding to ensure full production from the Mitchell Act hatcheries dampens the impact of Canadian and Alaskan ocean fisheries on Washington and Tribal fisheries under the terms of the PST.

—Continue to support the NOAA Fisheries Disaster Assistance Program with Annual Funding

We respectfully request Congress's continued support of the Fisheries Disaster Assistance Program. This program was not funded in fiscal year 2020 and fiscal year 2021 annual appropriations. However, the program received $15.0 million in fiscal year 2019 and $20.0 million in fiscal year 2018. This funding is necessary to implement the Department of Commerce's declarations of Tribal fisheries disasters. Unfortunately, these disasters are becoming more frequent in light of a variety of natural and manmade circumstances beyond the control of Tribal fishery managers, which have led to severely depressed stocks and/or limited access to fisheries. Our member Tribes are currently waiting on requested determinations from the Secretary of Commerce as a result of numerous disasters in 2019 and earlier.

Lack of access to fisheries in 2020 due to the COVID–19 pandemic has only exacerbated the economic threats to Tribal fishing fleets. CARES Act and other COVID relief funding for fishery participant assistance has only covered a fraction of the Tribes' economic impacts and is not sufficient to maintain Tribal fishing fleets and food security during these difficult times. Forthcoming disasters could prove to be the tipping point if assistance is not readily on hand to support fisheries. Because of the seasonal nature of fishing, a single disaster can have significant impacts on annual revenues forcing fishers to drop out of the sector, and therefore sometimes lead to diminished fishing fleets. Under the current circumstances, Tribes are facing repeated disasters that are devastating to Tribal economies and cultures. Therefore, an ongoing, annually funded Fisheries Disaster Assistance Program is a much-needed stop gap measure to prevent the collapse of this important economic sector during difficult times. Providing timely fishery assistance shouldn't be solely based upon the passage of disaster relief legislation, but rather it should be programmatically funded and on hand to allow NOAA to rapidly respond.

CONCLUSION

The treaties between the Federal Government and Indian Tribes, as well as the treaty-reserved rights to harvest, manage and consume fish and shellfish, are the "supreme law of the land" under the U.S. Constitution (Article VI). It is therefore, critically important for Congress and the Federal Government to provide continued

support in upholding the treaty obligations and carrying out its trust responsibilities. An important component of these obligations is to fully fund the aforementioned sustainable salmon fisheries management programs that provide for improved harvest planning, hatchery production and habitat management. We respectfully urge you to continue to support our efforts to protect and restore our treaty-reserved rights and natural resources that in turn will provide for thriving economies for both Indian and non-Indian communities alike. Thank you.

[This statement was submitted by Lorraine Loomis, Chairperson.]

PREPARED STATEMENT OF THE OCEAN CONSERVANCY

FISCAL YEAR 2022 APPROPRIATIONS FOR THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Thank you for this opportunity to provide Ocean Conservancy's Fiscal Year 2022 (FY 2022) funding recommendations for the National Oceanic and Atmospheric Administration (NOAA). Ocean Conservancy has worked for 50 years to address threats to the ocean through science-based, practical policies that protect our ocean and improve our lives.

We greatly appreciate the subcommittee's efforts to ensure a positive outcome for NOAA in the fiscal year 2021 omnibus, which made important investments in NOAA programs, including the National Marine Fisheries Service, the Marine Debris Program, and the Regional Ocean Data Portals.

The Biden administration's proposed budget makes historic investments in NOAA, providing a $1.4 billion increase in agency funding, including an additional $800 million to expand climate-related services and a $500 million increase for satellites and forecasting technologies. We support President Biden's request for NOAA and urge Congress to appropriate at least this level of funding for the agency.

NOAA's mission to understand, protect, restore, and manage our ocean, coasts, and Great Lakes is vitally important as we mitigate and adapt to the impacts of climate change and responsibly build our blue economy. Our ocean and coastal communities are at the frontlines of climate change. Many of these communities—particularly those whose residents are black, indigenous, and people of color—have disproportionately experienced these impacts over the course of history. Sea level rise, coastal flooding, ocean acidification, and increased ocean temperatures are all impacting our coastal residents and their ability to safely work and enjoy our ocean and coasts. These impacts are also affecting our marine species, from fish to whales and sea turtles, as well as the habitat they rely upon. Robust funding is needed to continue to understand the impacts of climate change and provide resources for local communities to better adapt and mitigate changes in our ocean and coast.

The U.S. blue economy contributes $373 billion annually to the Nation's GDP and supports 2.3 million jobs, with nearly half of that impact coming from tourism, recreation and fisheries. A healthy and resilient ocean is vital to maintain and grow our coastal economies and communities. As climate change, however, causes sea levels to rise, altering our coasts and significantly damaging our infrastructure, and as marine species leave their historic grounds, we risk losing these substantial drivers of our coastal economy.

Some of NOAA's most successful programs work to provide resources and decision-making authority to regions, States, and local communities to ensure a bottom up approach to solving the issues these communities face today. NOAA is providing leverage for hardworking people on the coast and on the water who are building resilience to climate change and fighting for a stronger blue economy through region-by-region fishery management, region-specific programs, extramural funding that supports State agencies and universities, place-based conservation in our estuaries and oceans, and more.

As you craft the fiscal year 2022 spending bills, we ask that you consider the balance between NOAA's oceanic and atmospheric missions and the nexus between the two. Americans should not have to choose between weather forecasts and ocean and coastal resources like fisheries, coral reefs and marine mammals. Frequently, these aspects of NOAA's mission interact with each other, as well as other agencies, to enhance the outcome of their mission. For example, ocean observations and monitoring provide critical information for climate monitoring, severe storm tracking and weather forecasting. Ocean programs also facilitate homeland security and national defense functions, including U.S. Navy operations and U.S. Coast Guard search and rescue missions.

We offer the following recommended funding levels and justifications for certain critical NOAA programs and activities.

Account, Program or Activity	Fiscal Year 2021 Enacted	Fiscal Year 2022 Recommendation
Operations Research and Facilities		
National Ocean Service:		
Coastal Science, Assessment, Response and Restoration: Marine Debris.	$9 m	$18 m
Coastal Zone Management and Services: Regional Ocean Data Portals.	$2.5 m	$10 m
National Marine Sanctuaries	$56.5 m	$84.5 m
National Estuarine Research Reserves	$28.5 m	$42.5 m
IOOS Regional Observations	$40.5 m	$69.5 m
National Marine Fisheries Service	$964.862 m	$1,197 m
Fisheries Science and Management: Fisheries Data Collections, Surveys and Assessments.	$175.927 m	$206 m
Fisheries Science and Management: Fisheries and Ecosystem Science Programs and Services.	$146.927 m	$170.6 m
Regional Councils and Fisheries Commissions.	$41.500 m	$45.650 m
Office of Oceanic and Atmospheric Research		
Integrated Ocean Acidification	$15.5 m	$22 m
National Sea Grant College Program	$75 m for Sea Grant and $13 m for aquaculture.	$130.6 m total, with $115.6 m for the National Sea Grant College Program and $15 m for Sea Grant Aquaculture.

Marine Debris—$18 million

Marine debris, particularly plastic waste pollution, is one of the biggest pollution problems threatening the world's oceans and waterways. An estimated 150 million metric tons of plastic waste are in the ocean today, and every year an estimated 8 million metric tons more are being added. Without immediate intervention, 250 million metric tons of plastic waste could be in the ocean in fewer than 10 years. Marine debris has serious effects on the marine environment and the economy. It impacts wildlife through entanglement, ingestion and ghost fishing and also impacts marine transportation, causing navigational hazards and vessel damage. In 2018, Congress reauthorized NOAA's Marine Debris Program via the Save Our Seas Act, which enjoyed broad bipartisan support in both chambers. In 2020, Congress again reauthorized NOAA's Marine Debris Program through the bipartisan Save Our Seas Act 2.0, which increased the responsibilities of the Marine Debris Program. We request $18 million for the program, consistent with the President's budget, to allow the agency to meet the current challenge of marine debris.

Regional Ocean Data Portals—$10 Million

Regional Ocean Data Portals are publicly available online tools that disseminate maps, data, and information to inform decisions and enhance entrepreneurial opportunities. They are managed by Regional Ocean Partnerships, which provide interagency engagement with States, Tribes, localities, and Federal agencies to collaborate on cross-jurisdictional ocean and coastal matters. These partnerships also coordinate and engage ocean and coastal stakeholders, including academia, non-governmental organizations, and industry. Regions are sufficiently underfunded to address the most pressing management and data integration challenges, and Federal funding is currently split among the four Regional Ocean Partnerships and their nine functional equivalents, which totals nine regions. Appropriating $10 million would provide a necessary boost that will allow regions to better address ocean and coastal management needs.

National Marine Fisheries Service—$1.197 Billion

Fisheries are an important part of our Nation: fishing feeds us, supports coastal communities, connects us to the ocean and sustains vibrant cultures. Fish and the fisheries they support, however, are experiencing the impacts of climate change. Rapidly changing ocean conditions are disrupting where fish are found, what they can eat, where they can live, and how many fish there are. There is an urgent need

to move towards climate-ready fisheries—fisheries that prioritize sustainability, resilience and equity in the context of rapid changes and increased uncertainty associated with climate change. There is a clear path forward: the agency must work to accelerate research on climate change impacts to fisheries, increase the adoption of proven tools and approaches for managing with change, and take steps to provide information and analysis that can help managers incorporate this understanding into decision-making. This requires investments to be made across programs at NMFS to ready our fisheries for climate change. Programs such as the Integrated Ecosystem Assessment and others work to better understand how changes are affecting marine resources and develop products to enhance the scientific advice provided to managers. Additional funding could enable more engagement by NMFS with the Fishery Management Councils and greater ability to enact climate-ready management. To manage for the impacts of climate change on our fisheries, we request $1.197 billion for NMFS, consistent with the President's budget.

Integrated Ocean Acidification—$22 million

The Integrated Ocean Acidification line item funds NOAA's ocean acidification program (OAP), which was established and mandated by the Federal Ocean Acidification Research and Monitoring (FOARAM) Act of 2009. Ocean acidification (OA) is the rise in acidity of the earth's ocean caused by uptake of carbon dioxide from the atmosphere. This rising acidity makes it harder for shell-forming species such as oysters and crabs to grow, and fundamentally alters many other processes (e.g., reproduction, risk avoidance) necessary for healthy ecosystems and the coastal industries that depend on them. Prior Federal investments in OAP have greatly expanded our knowledge of ocean acidification and its risks to coastal communities and industries, but current funding levels are not at the scale needed to understand this global problem and its impacts. We request $22 million for this program.

Marine Operations and Maintenance

Marine operations and maintenance should be funded at $193.9 million, consistent with the President's budget. Days at sea funded by this line are functionally tied to fishery stock assessments, and the two programs must be viewed together.

Thank you again for the opportunity to provide this testimony in support of robust funding for NOAA.

[This statement was submitted by Reggie Paros, Director, Government Relations.]

PREPARED STATEMENT OF OPENSECRETS

Dear Chairman Shaheen, Ranking Member Moran, and distinguished Members of the Senate Appropriations subcommittee on Commerce, Justice and Science, and Related Agencies.

Thank you for the opportunity to submit written testimony before the Committee to discuss fiscal year 2022 budget priorities regarding the modernization of the Foreign Agents Registration Act (FARA), a statute intended to inform the American public of foreign influence and lobbying operations attempting to impact U.S. policy or public opinion.

This written testimony is respectfully offered on behalf of OpenSecrets to the Committee for use during its consideration of Department of Justice funding and for inclusion in the official committee record.

OpenSecrets is a nonpartisan nonprofit research organization tracking money in U.S. politics and its effect on elections and public policy. Our vision is for Americans across the ideological spectrum to be empowered by access to clear and unbiased information about money's role in the U.S. political system and to use that knowledge to strengthen our democracy.

Activities of foreign agents and lobbyists divulged under FARA are a subject of sustained public interest. In this testimony, we respectfully request that the Committee include report language directing a review of the U.S. Department of Justice's implementation of FARA and a comprehensive audit of the use of the Lobbying Disclosure Act (LDA) exemption that will both be publicly accessible.

A publicly-accessible report to Congress is necessary to evaluate the feasibility and steps needed to require all filings by foreign agents to be made in an electronic, machine-processable electronic format yielding structured data. This would allow users to search and sort or download FARA data, ensuring the same level of accountability from lobbyists representing foreign interests as domestic ones.

Despite recommendations from the Department's Inspector General and outside experts, the Justice Department has been slow to implement changes to improve the

public's access to information about foreign influence and lobbying intended to impact U.S. policy or public opinion.

In September 2019, the Department of Justice launched new features enabling registrants to submit data through a web-form yielding some standardized data. While we believe this is a step in the right direction, only initial registrations are required to be submitted this way, so information reported in some of the most important records such as semi-annual supplemental statements may remain trapped in less accessible formats.

Continuing implementation of a modernized FARA reporting system that collects detailed structured data would provide the tools necessary for better oversight and ensure information about foreign influence is provided in an accurate, complete, and timely manner.

Using web-forms or submitting data in other structured formats across the board would allow the government to provide this information in an accessible form with little or no additional burden. FARA reporting is already conducted through an e-filing system that requires a web browser unless a registrant demonstrates limited access to the internet. Modernizing FARA's e-filing system can ultimately help ease the administrative burden associated with FARA registration.

The current system requires FARA filers to electronically submit information in most forms, including semi-annual supplemental statements that contain activities and receipts, using images or PDFs even though many of the records are originally produced in electronic formats such as CSV files. Image and PDF formatted files destroy critical aspects of the data included in the original formats and cannot be marked for sensitive information or used for automated calculations. Essential information about foreign lobbying activities remains locked away in hard-to-digest image files that complicate the process of publishing FARA information in a machine-readable format. Even the basic disclosure of how much money foreign actors spend to influence U.S. policy and public opinion is obscured, leaving the American public in the dark about how our laws are shaped and influenced.

FARA also has a number of exemptions that can be misunderstood or exploited.

One commonly used exemption enables some foreign agents to claim an exemption from FARA registration and disclosure rules if they register as lobbyists under the LDA, a disclosure statute designed to regulate the activities of domestic lobbyists.

Any individuals lobbying on behalf of a foreign commercial interest, rather than a foreign government or political party, may evade FARA disclosure requirements by merely registering under the LDA.

Domestic lobbying records are already required to be filed to Congress electronically and are immediately converted to structured data that are available to the public over the Internet. More parity between disclosure requirements under the LDA and FARA is necessary to ensure at least the same level of transparency from lobbyists representing foreign interests as domestic ones.

We respectfully urge the Committee to direct the Comptroller General of the United States, in consultation with the Inspector General of the Department of Justice, to conduct a comprehensive audit of the use of the LDA exemption examining (1) whether the LDA exemption has contributed to a decline in the number of registrations under FARA; (2) whether the LDA exemption has contributed to a lack of public awareness of lobbying activities on behalf of foreign entities; (3) the impact and feasibility of phasing out the LDA exemption; and (4) how to develop policy recommendations for increasing compliance with Federal lobbying registration and disclosure requirements.

We are confident that the report will provide valuable insight to the American people and pave the way to increased transparency of the activities disclosed by those foreign agents. We urge you to appropriate the funding necessary to evaluate modernizing this invaluable resource.

Our recommendations are based on our experiences using FARA, including efforts to republish FARA data online in ways that support greater access and meaningful analysis. OpenSecrets built the Foreign Lobby Watch database containing foreign lobbying documents and data. Our reviews of the DOJ's available foreign lobbying records found significant problems with how the data is currently structured.

We've designed our databases to make up for some of the shortfalls in how foreign lobbying information is currently made available to the public. Structured data directly from the government could streamline this process, improving the quality, utility, and clarity of the information collected by the FARA Unit.

Thank you for your attention to our concerns on this critical issue. We would welcome the opportunity to work with you further on this issue and make any additional recommendations about this or other important issues before the Committee.

[This statement was submitted by Anna Massoglia.]

PREPARED STATEMENT OF THE PEW CHARITABLE TRUSTS

Chair Jeanne Shaheen
Ranking Member Jerry Moran
Subcommittee on Commerce, Justice, Science, and Related Agencies
Senate Committee on Appropriations

Chairwoman Shaheen and Ranking Member Moran, we appreciate the opportunity to provide public comments on fiscal year 2022 appropriations. Over the past year, agencies and departments across the Federal Government implemented proactive policies and programs in response to the pandemic. As the committee begins the process of determining next fiscal year's funding levels, it is important that the agencies and departments levels include funding for the collection, evaluation, and analysis of data and programs.

The Pew Charitable Trusts Civil Legal System Modernization project works to support efforts to deliver a more accessible and effective civil legal system. We'd like to take this opportunity to highlight the importance of collecting and reporting State civil legal system data to inform Federal policy.

As the country continues to respond to and recover from the pandemic, our Nation's civil legal system will continue to face strains, both in adapting to changing environments and increasing caseloads. With the growing number of evictions and foreclosures exacerbated by the COVID–19 pandemic, and the CDC's current moratorium on evictions, as well as rising debt in collections, State civil courts have developed a variety of approaches to manage what will likely become a tsunami of court cases that will have long-lasting financial consequences for millions of Americans.

By passing the Foundations for Evidence-based Policymaking Act, Congress not only showed the importance of data collection, but also how it can play a critical role in developing Federal policies. For example, identifying the rate of eviction case filings could inform CDC decisions related to the cessation or extension of the Federal eviction moratorium. Likewise, a better understanding of the scope of debt collection lawsuits could facilitate rule-making at the Consumer Financial Protection Bureau. More immediately, State court data could help the CFPB evaluate the efficacy of its new rule requiring debt collectors in eviction cases to inform tenants of their rights under the CDC moratorium.

Prior to the pandemic, there was already a lack of data and transparency surrounding our civil court system. A Pew report found that 38 States do not report on the number of debt cases in their civil legal systems and only two provide data on the number of default judgments. Though there is no comprehensive analysis of State court data on housing cases, we anticipate a similar lack of data. While it has a mandate to collect and analyze civil justice data, the last national study conducted by the Bureau of Justice Statistics was done in 2005. This subcommittee can play an important role in better understanding the impact of the civil justice system on Americans as evictions and debt lawsuits loom.

Thank you again for the opportunity to comment.

[This statement was submitted by Erika Rickard, Project Director, Civil Legal System Modernization.]

PREPARED STATEMENT OF THE POPULATION ASSOCIATION OF AMERICA/ASSOCIATION OF POPULATION CENTERS

FISCAL YEAR 2022 APPROPRIATIONS FOR THE CENSUS BUREAU AND NATIONAL SCIENCE FOUNDATION

The Honorable Jean Shaheen, Chair and The Honorable Jerry Moran, Ranking Member:

Thank you, Chair Shaheen and Ranking Member Moran, and other distinguished members of the subcommittee, for this opportunity to express support for the Census Bureau and the National Science Foundation (NSF). These agencies are important to the Population Association of America (PAA) (www.populationassociation.org) and Association of Population Centers (APC), because they provide direct and indirect support to population scientists and the field of population, or demographic, research overall. In fiscal year 2022, we urge the subcommittee to provide the Census Bureau with $2 billion, which is approximately $600 million above the Administration's request. In addition, PAA and APC support $10 billion for the National Science Foundation (NSF), consistent with the recommendation of the Coalition for

National Science Funding, which largely reflects the Administration's fiscal year 2022 request.

The PAA and APC are two affiliated organizations that together represent over 3,000 social and behavioral scientists and the nearly 40 population research centers that receive Federal funding and conduct research on the implications of population change. Its members, which include demographers, economists, sociologists, and statisticians, conduct scientific and applied research, analyze changing demographic and socio-economic trends, develop policy and planning recommendations, and train undergraduate and graduate students. Their research expertise covers a wide range of issues, including adolescent health and development, aging, health disparities, immigration and migration, marriage and divorce, education, social networks, housing, retirement, and labor. Population scientists compete for funding from the NSF and rely on data produced by the Nation's statistical agencies, including the Census Bureau, to conduct research and research training activities.

THE CENSUS BUREAU

The Census Bureau is the premier source of data regarding U.S. demographic, socio-economic, and housing characteristics. While PAA/APC members have diverse research expertise, they share a common need for access to accurate, timely data about the Nation's changing socio-economic and demographic characteristics that only the U.S. Census Bureau can provide through its conduct of the decennial census, American Community Survey (ACS), and a variety of other surveys and programs.

PAA and APC understand that the Census Bureau's funding level declines dramatically in the initial years of the decennial planning cycle, and the Administration's request reflects, appropriately, this anticipated decrease in funding. Nonetheless, PAA and APC urge the subcommittee to support increased funding for the Census Bureau in fiscal year 2022 above the Administration's request. In fiscal year 2022, Congress has a unique opportunity to initiate multi-year funding for the Bureau, providing the agency with resources that it needs to not only sustain and strengthen its mission, but also to recover from years of postponed enhancements and pursue numerous necessary operational improvements. The ambitious fiscal year 2022 funding recommendation ($2 billion) that census stakeholders are supporting would enable the Bureau to purse, among other things, the following initiatives:

Modernizing the Bureau's data infrastructure.—The Census Bureau needs to harness currently available Big Data technology and methodology to reduce respondent burden and realign the Bureau's already-existing data from multiple sources into universal "frames." A significant increase in funding for the Census Frames initiative, which was only funded at about $12.7 million in fiscal year 2021, will allow the Census Bureau to reduce duplication, increase ease and usability of Federal statistical data, enhance the quality of Bureau products, facilitate analysis of the U.S. population and economy, and ensure that the Federal Government can utilize administrative data, responsibly and appropriately, to maximum advantage before burdening survey respondents.

Enhancing the American Community Survey (ACS).—ACS data are an invaluable resource that data users, including population scientists, rely on throughout the decade to make key investment and policy decisions as well as to conduct applied and scientific research and evaluate programs. The Bureau also needs to continue to use the ACS "as a testbed for innovative survey and data processing techniques," as Congress directed in fiscal year 2021. Funding for the ACS has remained relatively stagnant in recent years, including a little over $226 million in fiscal year 2021. The Bureau needs additional funding (no less than $45 million to increase the sample size by at least 1 million households) to properly plan and execute an expansion of the ACS, beginning in fiscal year 2022.

Stabilizing and increasing funding for Survey of Income and Program Participation (SIPP).—After multiple COVID–19 relief bills, policymakers and scientists need to understand how the individual provisions in these supplemental appropriations measures assisted (or failed to assist) families and communities. The Survey of Income and Program Participation (SIPP) is designed to achieve that goal, yet its funding has fluctuated routinely. Stabilizing and increasing support for SIPP, to no less than $48 million in fiscal year 2022, will help Congress make evidence-based policy decisions on the effectiveness of government assistance programs. Additional funding for SIPP could be reinvested to address long term erosion of the survey's funding and response rates, putting that money toward increased non-response follow up.

Extending Pulse Surveys.—The Bureau's "Pulse Surveys" have provided timely data regarding the economic, social, and health effects of COVID–19 on U.S. communities and businesses. The surveys have attracted support from other Federal agencies that have requested to add questions and collaborated with the Census Bureau to produce the surveys. The Census Bureau needs no less than $6 million in fiscal year 2022 to sustain and expand this innovation that provides much more timely data on current economic and social issues. Additional funding could be used to further expand the success of this novel program.

Completing the 2020 Census.—Additional funding is necessary to complete delayed final assessments and evaluations of the 2020 Census and to release all remaining data products.

Initiating the 2030 Census.—PAA and APC support the Census Bureau's proposal to accelerate planning for the 2030 Census by initiating a research and testing program to pursue innovations, early in the decennial planning cycle, including improvements to the address list, evaluations to assess the appropriateness of using administrative records in the enumeration process, and strategies for making field operations more efficient.

In sum, PAA and APC join other census stakeholders in urging the subcommittee to provide the Census Bureau with $2 billion in fiscal year 2022 to complete all 2020 Census operations and data delivery objectives; enhance the ACS, including plans to increase the survey's sample size; initiate planning for the 2030 Census; improve the SIPP; extend and expand the Pulse Surveys and improve the quality and granularity of all census data sets. Further, PAA and APC urge the subcommittee to exercise its oversight authority and ask questions about the agency's proposed budget restructuring proposal, especially as it affects the status and integrity of the ACS.

NATIONAL SCIENCE FOUNDATION (NSF)

For over 75 years the mission of NSF has been to promote the progress of science; to advance the National health, prosperity, and welfare; and to secure the National defense. Understanding the implications of complex population dynamics is vital to the agency's mission. The Directorate of Social, Behavioral and Economic (SBE) Sciences is the primary source of support for the population sciences within the NSF. The Directorate funds critical large-scale longitudinal surveys, such as the *Panel Study of Income Dynamics,* that inform pressing policy decisions and provide the empirical evidence to help policy makers to formulate effective decisions. It also has participated in cross-cutting, interdisciplinary initiatives of interest to population scientists, such as the *Coastlines and People* program, which supports research on the implications of climate change on populations, and *Mid-scale Infrastructure*—two areas of emphasis among the agency's research priorities.

NSF is the funding source for over 20 percent of all federally supported basic research conducted by America's colleges and universities, including basic behavioral and social research. Moreover, the SBE Directorate funds approximately 67 percent of basic, university-based social and behavioral sciences research in the Nation.

PAA and APC, as members of the Coalition for National Science Funding (CNSF), applaud the Administration's proposed NSF fiscal year 2022 budget request, $10.2 billion, which represents a nearly 20 percent increase in funding over the fiscal year 2021 enacted level. Moreover, the budget request envisions an allocation for SBE that would grow by approximately 13 percent, reflecting, we believe, a recognition that not only has SBE's funding stagnated vis-à-vis other directorates, but more importantly that SBE related research offers significant contributions to scientific progress. We continue to support the Committee's longstanding practice of not stipulating specific funding levels for individual NSF directorates; however, it is helpful to understand the Administration's views on research priorities, and in this instance we concur.

We are also aware of the growing consensus within Congress and the Administration around the concept of establishing a new directorate within NSF that would support translational research, emerging technologies and public-private partnerships. We hope that the Committee will ensure that a new directorate will be funded through an expansion of NSF's footprint and budget-and not through siphoning resources from other research directorates. We note that the budget request includes a reprogramming of funds from existing NSF initiatives that would be transferred to the new directorate, but also requests new spending for the majority of the new directorate's budget.

We urge Congress to accelerate the growth of NSF's budget by providing NSF with at least $10 billion in fiscal year 2022. The funding level will enable the NSF SBE Directorate to continue its support of social science surveys and a robust portfolio of population research projects. The NSF also continues to focus on inter-

disciplinary research initiatives, recognizing that social and behavioral science contributes to many critical areas of research. For example, the *Mid-scale Infrastructure* program is currently funding broad-scale, sensor-based data collection projects that represent collaborations among population scientists and computer scientists. Increased funding in fiscal year 2022 will allow NSF to continue funding the most promising grant applications and reduce the number of high caliber proposals that are rejected solely for lack of sufficient funds.

Thank you for considering our requests and for supporting Federal programs that benefit the population sciences under the subcommittee's jurisdiction.

[This statement was submitted by Mary Jo Hoeksema, Director, Government and Public Affairs.]

PREPARED STATEMENT OF THE REGIONAL INFORMATION SHARING SYSTEMS

Information sharing and officer and citizen safety are top priorities of law enforcement leaders. For more than 47 years, law enforcement officers and criminal justice professionals have turned to and grown to rely on a nationally recognized and respected program known as the Regional Information Sharing Systems (RISS). RISS is a proven resource for law enforcement. It is difficult to place a dollar amount on RISS's return on investment because it not only helps law enforcement *detect, deter, and resolve criminal investigations,* RISS helps *keep officers and citizens safe,* while *ensuring that privacy and civil liberties* are protected. RISS is a leader in secure information sharing and investigative case support and has enabled an unprecedented level of collaboration among all levels of law enforcement. Our Nation and communities face threats every day—from national security to the opioid and methamphetamine epidemic, from violence against women and sex trafficking to property and financial crimes, and from cybercrime to identity theft. RISS offers quality and evidence-based support to law enforcement agencies and communities; often agencies cannot obtain these services and resources anywhere else. It is critical that RISS be sustained and expanded. It is respectfully requested that RISS be funded in fiscal year 2022 at $48 million.

RISS is composed of six regional centers and the RISS Technology Support Center (RTSC). RISS is locally managed by policy board members consisting of police chiefs, sheriffs, commissioners, and other law enforcement leaders in each RISS Center's multistate region. An Executive Director operates each RISS Center. The RTSC is RISS's nationwide technology operation and maintains, operates, and enhances RISS's secure infrastructure and applications. The RISS Centers work regionally and nationwide to respond to each region's unique crime problems while working together on a nationwide basis to strengthen and advance criminal justice priorities. RISS is a trusted, secure, and cost-effective program law enforcement agencies and officers utilize to:

—Share critical law enforcement and intelligence data across jurisdictions.
—Access case and analytical services that help solve crimes and prosecute offenders.
—Prevent friendly fire and safeguard the men and women protecting our streets.
—Preserve the integrity of operations and protect citizens and communities.
—Equip officers and criminal justice professionals with training, technical assistance, and research.

RISS receives hundreds of shared success stories from officers showcasing how RISS services and resources help law enforcement efforts in the field. To read example successes from each State, visit www.riss.net/Impact.

Investigative Case Support: RISS provides investigative and analytical services, training, publications development, and investigative research, including the following:

—Analytical services, such as cell tower mapping, link charts, 2D and 3D crime scene diagrams, telephone-toll analysis, financial analysis, digital forensics, and audio/video enhancements.
—Intelligence and investigative research, which helps identify suspect addresses, monikers, criminal associates, and other investigative information.
—Specialized equipment, such as cameras, recorders, and other devices.
—Technical support through RISS's field services staff and field-based solutions.
—Training opportunities on topics such as investigative techniques and emerging crime. Examples include *Advanced Search Technique: Hidden Compartment; Courtroom Testimony; Financial Crimes Against Seniors; Basic Crash Investiga-*

tions; Narcotics and Counterfeit Goods; Death Investigations; and Unemployment Fraud.

—Law enforcement briefings and publications, such as *Global Pandemic-Implications on the Drug Trade and the Drug Concealment Report: Traffickers' Unusual Places.*

RISS has set and achieved evidence-based goals since its inception. Below are some highlights of RISS's fiscal year 2020 results and productivity.

—Developed 20,924 analytical products.
—Loaned 2,752 pieces of specialized equipment.
—Responded to 47,363 requests for research and technical assistance.
—Sponsored or cosponsored 749 training opportunities and helped train 33,119 individuals.
—Provided access to more than 60.9 million investigative records to authorized personnel.
—Enabled users to conduct more than 4.5 million inquiries to RISS resources.

Secure Information and Intelligence Sharing: RISS integrates advanced technology and field-based solutions that connect systems and officers across jurisdictions.

The RISS Secure Cloud (RISSNET) provides a system of systems concept, connecting networks and databases, providing bidirectional information sharing, and offering a single search of connected systems. RISSNET provides access to hundreds of resources and millions of records. Many of these systems are owned and operated by RISS partners, who use RISSNET to securely share information with a broader and vetted law enforcement community. RISS has also developed and maintains resources accessible via RISSNET, such as the:

—*RISS Criminal Intelligence Database (RISSIntel).*—Provides for a real-time, online federated search of connected systems; adheres to 28 Code of Federal Regulations Part 23.
—*RISSLeads Investigative Website.*—Facilitates multijurisdictional information sharing.
—*Law Enforcement Secure Hosted Websites.*—Provide partners a solution to securely share information and materials with specific groups or partners.
—*RISS Property and Recovery Tracking System (RISSProp).*—Houses pawn, secondhand, and other shop transactions to enable officers to identify and return stolen property and identify other related criminal activities.
—*RISS Master Telephone Index (MTI).*—Compares and matches telephone numbers in law enforcement investigations.
—*RISS Money Counter Network (MCN).*—Stores currency serial numbers compared to currency submitted by officers in previous cases.
—*Drug Pricing Reference Guide.*—Enables officers to search for comparable prices on narcotics; serves as a price guide when assessing the value of seizures and contraband; and identifies supply, demand, and popularity trends within the drug market.

Below are examples of RISS technology-related accomplishments during fiscal year 2020.

—Designed, developed, and began deploying the next generation of RISSIntel. The new RISSIntel is housed in the secure government cloud, provides advanced features and functionality, and contains a new infrastructure and user interface.
—Connected intelligence systems to RISSIntel and enabled bidirectional sharing of information among more than 75 RISS and partner intelligence databases.
—Migrated RISSNET resources to a cloud environment and further enhanced security.
—Advanced the use of RISSProp to support organized retail crime investigations and launched application enhancements. RISSProp has helped recover more than $8 million in property since its inception.
—Leveraged RISSafe Watch Centers to support nationwide threat-to-life tips and leads.
—Enhanced and expanded the use of the RISS MTI and the RISS MCN.

RISS streamlines processes, increases information sharing and officer access to critical data, enhances officer and community safety, and advances important technology solutions.

Deconfliction: RISS provides officer safety event deconfliction.

Event deconfliction helps support and protect law enforcement officers in a variety of ways. Officers partaking in high-risk operations enhance their personal safety and the safety of those around them, and they identify operational conflicts and collaborate with other law enforcement agencies and officers. It also safeguards community members, helps ensure operational integrity, strengthens information sharing, helps reduce risk and liability, and builds community confidence. Officers can leverage each other's information and successfully apprehend criminals. Event deconfliction helps prevent "friendly fire" and helps solve investigations.

The RISS Officer Safety Event Deconfliction System (RISSafe) supports law enforcement personnel who are conducting an event near one another at the same time. When certain elements are matched between two or more events, a conflict results. Immediate notification is then made to the affected agencies or personnel regarding the identified conflict. Since RISSafe's inception, more than 2.2 million operations have been entered into RISSafe, resulting in more than 506,000 identified conflicts. Without identifying these conflicts, officers may have interfered with another agency's or officer's investigation, links between cases may have been lost, or officers or citizens may have been unintentionally hurt or killed. RISSafe is accessible on a 24/7/365 basis and is available at no cost to all law enforcement agencies. Currently, 29 RISSafe Watch Centers are operational, 23 of which are operated by organizations other than RISS.

Partnerships and Collaboration: At the heart of police work is collaboration. RISS helps connect agencies and officers at every level and constantly seeks and strengthens partnerships with criminal justice associations, professional groups, and Federal partners. Example partnerships include the following:

—Federal Bureau of Investigation (FBI)
—FBI's Law Enforcement National Data Exchange (N–DEx)
—High Intensity Drug Trafficking Areas
—National Fusion Center Association
—National Motor Vehicle Title Information System
—Nlets-The International Justice and Public Safety Network
—Office of the Director of National Intelligence
—U.S. Attorneys' Offices
—U.S. Department of Homeland Security
—U.S. Department of Justice

RISS Funding Increase in Fiscal Year 2022: RISS helps save agencies money and time and produces results. With increased funding, RISS can continue to provide its current programs while maximizing and expanding its secure infrastructure, proven services, and trusted partnerships. With increased funding at $48 million, RISS will support the following:

—Expand the new RISSIntel to law enforcement agencies and connect additional systems.
—Expand access to RISSafe, including agencies and users in rural and Tribal communities.
—Expand RISSafe's 24/7/365 coverage and establish additional RISSafe Watch Centers.
—Enhance the RISS Officer Safety Website and develop training videos, publications, and other materials.
—Increase support for the WSIN RISS Center's threat-to-life endeavor and facilitate fusion center involvement.
—Expand RISSProp to other regions and agencies and expand the RISS MCN by connecting additional money counter machines.
—Replace or obtain new equipment, including protective gear for law enforcement personnel.
—Expand the ability for small and rural agencies to access sophisticated, up-to-date investigative tools and equipment.
—Leverage Federal and nationwide partnerships to expand information sharing capabilities and available resources to officers and law enforcement personnel.
—Expand the MAGLOCLEN RISS Center's school safety action response plans initiative.
—Build on RISS's investigative support services and resources to further aid law enforcement efforts to combat the opioid, methamphetamine, and heroin crisis.

The year 2020 was challenging for everyone. As our Nation's leaders, you have many critical topics to address and resolve moving ahead. Your leadership and support are valued and appreciated. Your job is hard. Our men and women in uniform also face challenges every day. A program like RISS helps them by providing re-

sources, training, and information. RISS helps keep them safe. Our nation should continue to invest in and support the RISS Program.

It would be counterproductive to require local and State RISS members to self-fund match requirements or reduce the Bureau of Justice Assistance discretionary funding. RISS cannot make up the decrease in funding that a match would cause, for it has no revenue source of its own. RISS is grateful for the opportunity to provide this testimony at your request and appreciates your ongoing support. For additional information, visit www.riss.net.

[This statement was submitted by Donna Williams, Chair, RISS National Policy Group.]

PREPARED STATEMENT OF RESEARCH!AMERICA

FISCAL YEAR 2022 APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION

Research!America appreciates the opportunity to submit testimony for the record. We are the Nation's largest nonprofit alliance advocating for science, discovery, and innovation to achieve better health for all. We greatly appreciate the subcommittee's dedicated stewardship over funding for such critical priorities as the National Science Foundation (NSF). As you consider fiscal year 2022 allocations, we request that NSF receive at least $10.2 billion, an increase of 20 percent, in fiscal year 2022 to create jobs, support sustained economic growth, and bolster the wellbeing of Americans and people around the globe.

An increase of that amount aligns with the President's fiscal year 2022 request for NSF. We agree that bolstering our science and technology (S&T) capability is essential to fueling innovation and discovery that can improve the Americans' lives and lift our knowledge to new heights.

In that context, we are grateful to both parties in both chambers of Congress for pursuing legislation to greatly enhance our S&T strength and competitiveness. The NSF for the Future Act and U.S. Innovation and Competition Act are indicative of a forward-thinking approach to tackling threats—existing, emergent, and unknown—to Americans and individuals across the globe.

NSF's portfolio is intentionally diverse because science investment can yield unknown discoveries, spanning biology, economics, engineering, mathematics, computational science, data analytics, the social and behavioral sciences, and other high impact disciplines. We strongly believe that robust funding for NSF is a sound strategy for advancing the United States' strategic interests in an ever-more complex international landscape, preempting and overcoming threats to our Nation and world, and for meeting the aspirations of the American people.

What the NSF Provides

The NSF is a key driver for our Nation's S&T leadership, supporting strategically important research at more than 1,900 academic institutions in all 50 States, the District of Columbia, and three U.S. territories. An estimated 313,000 students, teachers, researchers, and postdoctoral fellows were empowered by the NSF in fiscal year 2020. Approximately 95 percent of NSF funding is allocated to grants or cooperative agreements to researchers through a competitive merit review process. Since 1950, NSF has supported more than 248 Nobel Prize winners, including seven Nobel Laureates in 2020. The research supported by NSF bears on virtually every sector of our economy, supports cyber—and other crucial areas of national security, and factor importantly into the productive use of big data and other highly promising avenues of S&T.

NSF's COVID Response

The NSF has been a key part of our National response to COVID–19. In March 2020, as the pandemic bore down on our Nation, NSF issued a call for Rapid Response Research (RAPID) proposals to address this new health threat. By April 10, 2020, more than 60 RAPID projects around the country were funded, supporting research related to the pandemic. For example, NSF-funded researchers modeled the spread of the virus and worked to understand transmission and prevention. Decades of NSF research investment was utilized in the response to the virus, including NSF-backed 3D printing technology for the production of PPE and computer software creating simulations to provide insight into the molecular structure of the virus.

NSF investments are also helping us prepare for future public health threats. Research in artificial intelligence and big data have the potential to identify disease threats before they spread. Other NSF-backed initiatives, like the Civic Innovation

Challenge, demonstrate how partnership between government and technology can equip communities to manage emergencies.

NSF Leverages American Ingenuity to Break New Ground in Science and Technology

NSF supports the type of high-risk research that drives progress and has resulted in recent groundbreaking discoveries. Researchers funded by NSF have made key breakthroughs in their 20-year quest to create quantum internet with a new process by which information stored at the atomic level can be received and read. Quantum internet can be used to send "un-hackable" messages and will improve GPS, both of which are key to national security. Though this is a long-term project, the invaluable applications are unquestionably worth the time and investment.

NSF funding also made possible a smartphone app which can identify signs of eye disease in children. Using smartphone photos, the program identifies a telltale "white sheen" which can indicate retinoblastoma, as well as cataracts or an infection. Research like this forms the basis for future apps which help with early detection and diagnosis of disease.

NSF-funded research also continues to propel progress through collaboration across multiple fields. Through NSF's continued support, scientists work together to produce cutting-edge research that pushes the fields of medicine, engineering, and biology forward. In 2019, interdisciplinary collaboration between multiple countries and more than 300 researchers allowed the Event Horizon Telescope (EHT) to capture the first image of a black hole. This discovery increased confidence in the fundamental laws of physics while creating a technological basis for future breakthroughs. Projects like this drive innovation and create, as a by-product, advances in technology and information exchange, which in turn, are used for other research.

Americans Understand the Value NSF Delivers

Since 1992, Research!America has commissioned national and State-level surveys to assess public sentiment on issues related to research and innovation. Our surveys have explored Americans' perspectives on the role of NSF-funded S&T in advancing key national priorities. One of the most consistent findings over time has been Americans' support for basic research. In our most recent survey, fielded in January 2021, 85 percent of respondents agreed that "even if it brings no immediate benefits, basic scientific research that advances the frontiers of knowledge is necessary and should be supported by the Federal Government."

NSF is Essential to Training the Next Generation of American Scientists and Innovators

The U.S.'s global leadership is directly tied to our strength in the fields of Science, Technology, Engineering, and Mathematics (STEM). NSF cultivates future American leaders in these strategically important disciplines. Since 1952, NSF has supported more than 61,700 students through Graduate Research Fellowships and has provided grant support to thousands of postdoctoral fellows and young investigators.

The agency has also engaged in unique public-private partnerships, including the High Performance Computing (HPC) Consortium, a partnership between IBM, the White House Office of Science and Technology Policy, the U.S. Department of Energy, and the NSF. This partnership gave researchers studying the COVID–19 virus access to powerful computational platforms which allowed for major breakthroughs in modeling COVID–19 transmission and the atomic structure of the virus. Efforts like this set the stage for future success as our Nation seeks to accelerate the pace of medical and scientific progress.

Research!America appreciates the complicated and complex task facing the subcommittee as it seeks to prioritize funding in a manner that best serves the American people. We urge you to provide at least $10.2 billion, an increase of 20 percent, for NSF in FY22. We hope you will call on our organization if additional information would prove useful.

Thank you for your continued leadership and consideration.

[This statement was submitted by Mary Woolley, President and CEO.]

PREPARED STATEMENT OF THE SAC AND FOX NATION

FISCAL YEAR 2022 BUDGET FOR THE OFFICE OF JUSTICE PROGRAMS, DEPARTMENT OF JUSTICE

Chairwoman Shaheen and distinguished Members of this subcommittee, on behalf of the Great Sac and Fox Nation, I submit testimony of our Tribal priority requests for funding programs in the fiscal year 2022 budget for the Office of Justice Programs (OJP) in the Department of Justice (DOJ). The Sac and Fox Nation is the

home of Jim Thorpe, one of the most versatile athletes of modern sports who earned Olympic gold medals for the 1912 pentathlon and decathlon. The Nation would like to thank Congress for providing relief that is allowing Tribes to begin the recovery process from the pandemic that will remain as prominent in the minds of the world as the name Jim Thorpe.

The Sac and Fox Nation would like to advance the following Department of Justice budget requests for fiscal year 2022:

1. Fully Fund the Tribal Law and Order Act
2. Fully Fund All Tribal Provisions of the Violence Against Women Act
3. Tribal Grants—Utilize DOJ Appropriations as Base Funding with Tribes Setting Their Own Priorities
4. 10 percent Tribal Set-Aside from All Discretionary Office of Justice Programs
5. Approve a Streamlined Funding Mechanism for the Coordinated Tribal Assistance Solicitation (CTAS)

The Sac and Fox Nation also supports the appropriation requests of the National Congress of American Indians.

About the Sac and Fox Nation

The Sac and Fox Nation is a Self-Governance Tribe headquartered in Stroud, Oklahoma. Our Tribal jurisdictional area covers all or parts of Lincoln, Payne, and Pottawatomie counties. Of the over 4,000 enrolled Tribal members, 2,600 live in Oklahoma. Our culture is based upon respect for the life within ourselves, our families, our communities, and all of creation. The Sac and Fox way of life is spiritually based. The Creator gave this way of life to the Sac and Fox people and we seek the guidance of the Creator in how to live. The oldest continuing religious practices are ceremonies like clan feasts, namings, adoptions, and burials. More recent religious practices include the Drum Dance, the Native American Church and Christianity.

Fully Fund Tribal Law and Order Act as Authorized

The Tribal Law and Order Act (TLOA) has three basic purposes:

1. Make Federal departments and agencies more accountable for serving Native peoples and land;
2. Provide greater freedom for Indian Tribes and Nations to design and run their own justice systems; and,
3. Enhance cooperation among Tribal, Federal, and State officials in key areas such as law enforcement, training, interoperability, and access to criminal justice information.

The Sac and Fox Nation operates a Juvenile Detention Center which provides services to 46 Tribes in Oklahoma, Kanas and Texas, as well as the State of Oklahoma. We are anxious to advance the opportunities that TLOA can offer to further expand and increase access to our facility. However, unless TLOA is fully funded, facilities such as ours will not be able to attain the full potential and help to guide children in the system towards a successful future.

The U.S. Commission on Civil Rights has consistently reported about the chronic underfunding and the breakdown in the trust and treaty obligations of the United States to Tribes. In both the Quiet Crisis and Broken Promises reports, it was noted that *"Native Americans as a group suffer from one of the Nation's highest rates of crime victimization. At the same time, the criminal justice system in Indian Country faces structural barriers and struggles to fully recognize Tribal sovereignty. The additional failure to provide sufficient Federal funding undermines the ability of Tribal governments to provide criminal justice and public safety for their citizens."*[1] The full potential of TLOA cannot be realized or implemented without sufficient resources for Tribal justice systems and ongoing coordination and consultation between Tribal governments and appropriate Federal agencies. While Sac and Fox is optimistic that President Biden's *Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships* has benefitted those working in the Federal Government, we need Congress and staff to better understand how dire Tribal communities need resources to improve our quality of life and protect our people, land, and traditions.

While DOJ recognized the importance of completing the circle when it issued the "Proposed Statement of Principles"[2], in which it is referenced that stable funding at sufficient levels for essential Tribal justice functions is critical to the long-term

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[1] A Quiet Crisis: Federal Funding and Unmet needs in Indian Country, July 2003, and Broken Promises: Continuing Federal Funding Shortfall for Native Americans, December 2018 by U.S. Commission on Civil Rights

[2] Guidelines Stating principles for Working with Federally Recognized Indian Tribes, Eric Holder, The Attorney General, U.S. Department of Justice, December 3, 2014

growth of Tribal institutions. Yet, more than 10 years after passage of TLOA, provisions of the act remain under funded.

Office of Violence Against Women.—Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the $5 million authorized for Tribal implementation of VAWA special domestic violence criminal jurisdiction and continue to fund the Indian Country Sexual Assault Clearinghouse at $500,000.

Thank you for helping us to protect our mothers, daughters, sisters and wives from jurisdictional gaps or safe havens for criminals to include Indian Women in the 2013 reauthorization of VAWA. But without funding to implement the law, this is an idle victory. We urge you to fully fund all of the Tribal provisions of VAWA and offer survivors of these crimes protection and access to much-needed services.

It is estimated that over 85 percent of American Indians and Alaska Natives will experience intimate partner violence, stalking, or sexual violence in their lifetime. This violence threatens the lives of Native women and children and the future of American Indian Tribes and Alaska Native villages. The Office of Violence Against Women (OVW) provides funding to Tribal governments to address violence against women in their communities. OVW's largest source of funding for Tribal governments is the Grants to Tribal Governments Program, which is funded via statutory allocations from other OVW programs. Full funding for these OVW programs results in full funding for the Grants to Tribal Governments Program.

Tribal Grants.—Eliminate the competitive grant funding process and utilize Justice Department appropriations as base funding where Tribes and Tribal Courts themselves determine their own priorities.

One of the biggest issues with DOJ funding is that it is competitive. In order to obtain essential funding Tribes must compete against each other based on DOJ's priorities and guidelines rather than Tribes identifying their own priorities to best serve their citizens at the local level.

Tribes have advocated to dispel grant funding for desperately needed services at the local level. Instead, the approach should be to utilize DOJ appropriations as base funding so that Tribes can develop sustainable programs for the benefit of their citizens. Grants offer one-time funding streams with no assurances of future funding to build staff capacity and generally does not allow Tribes enough time to design and implement effective programs without having to engage in the next cycle to compete for funds. It appears that DOJ understands this concept inasmuch as it has previously proposed the idea of base funding in the form of a block grant during an earlier Tribal consultation on the OVW funding. We propose that DOJ not merely propose this for OVW but consider this for all Tribal appropriations in the Department so that Tribes can determine their own priorities.

Tribal Set-Aside (Ten Percent).—Create a 10 percent Tribal set aside from funding for all discretionary OJP programs and ensure that those funds are allocated as flexible base funding. A 10 percent set Tribal set aside would streamline the Federal funding process by which Tribes receive resources to establish Tribal courts; assist in developing detention facilities; provide legal assistance; develop and maintain juvenile delinquency prevention programs; and provide substance abuse prevention programs. In addition, the set-aside funding would give Tribes the flexibility to develop a comprehensive strategy on how best to spend these resources to meet needs at the local level.

Congress and the Administration should enact an amendment to the Budget Control Act of 2011 to fully exempt Indian program funding from future sequestrations to honor the Federal trust responsibility and the chronic and severe underfunding of all Tribal programs.

The Coordinated Tribal Assistance Solicitation (CTAS).—CTAS attempts to streamline the grant application process for Tribes and Tribal Consortia to enable them to submit a single grant application for most of the Tribal grant programs in DOJ, as opposed to previous years in which Tribes were required to submit multiple grant applications. However, consideration was not given to the capacity of Tribes to prepare this large application model, which, for many Tribal communities, remains a struggle to apply for these multiple grant awards with separate reporting requirements, award periods, and grant managers. CTAS will not achieve its intended purpose of streamlining Tribal grants until it is accompanied by a streamlined funding mechanism.

Thank you for allowing the Sac and Fox Nation to submit our funding priorities and comments on the Office of Justice Programs and the overall Department of Justice funding for Tribes.

[This statement was submitted by the Honorable Justin F. Wood, Principal Chief.]

PREPARED STATEMENT OF THE SEA GRANT ASSOCIATION

The Sea Grant Association (SGA) recommends Congress appropriate at least $107.9 million in fiscal year 2022 for the National Sea Grant College Program (Sea Grant) and at least $15 million for Sea Grant Aquaculture. The SGA recommendation of $107.9 million for Sea Grant includes a minimum of $25 million to expand Sea Grant's capacity to address coastal resilience issues.

Sea Grant is funded out of appropriations provided to the National Oceanic and Atmospheric Administration (NOAA), Office of Oceanic and Atmospheric Research (OAR) in the Operations, Research, and Facilities account. The SGA is a non-profit organization dedicated to furthering the Sea Grant's vision, mission, and goals. SGA's regular members are the academic institutions that participate in the National Sea Grant College Program. The SGA advocates for greater understanding, use, and conservation of marine, coastal and Great Lakes resources.

On December 18, 2020, the President signed into law the *National Sea Grant College Program Amendments Act of 2020,* Public Law 116–221. This legislation reauthorized Sea Grant through fiscal year 2025. The legislation reiterated Sea Grant's core activities of supporting research, education, extension, and outreach. The legislation also called out support for several specific activities including efforts to strengthen coastal economic, environmental, and community resilience, and to conduct research and extension to further sustainable aquaculture. This testimony is submitted to the subcommittee to request the resources necessary for Sea Grant to meet the programmatic objectives and priorities called out in Public Law 116–221.

JUSTIFICATION FOR THE FISCAL YEAR 2022 SEA GRANT ASSOCIATION'S REQUEST FOR SEA GRANT

Over 126 million residents—40 percent of the population of the United States—live in coastal counties. These counties employ 56 million people, resulting in $3.4 trillion in wages annually, and produce more than $8.3 trillion in goods and services that support coastal and non-coastal communities. Weather- and climate-related hazards impacting these communities have increased at an alarming rate. The total cost of all U.S. billion-dollar disasters over just the last 5 years (2015–2019) exceeds $525 billion. Weather and climate risks are deeply connected to threats to critical infrastructure, water and food supplies, social instability, unemployment, and governance challenges. Most recently, we are seeing these types of interdependencies play out as the COVID–19 pandemic and resultant economic crisis have clearly exacerbated impacts to coastal communities, particularly under resourced communities and communities of color. Sea Grant, with its partners and through the expansion of its resilience portfolio, will apply the knowledge gained via research to help communities of color, (including Native American and Indigenous communities), and low-income communities reduce or eliminate the barriers to the implementation of adaptation, mitigation, and resilience strategies.

Increasing physical and economic damages, social inequities, and personal despair have tested our level of preparedness to deal with and respond to major weather and climate threats. Hurricanes, typhoons and tsunamis are compounded by other challenges including coastal inundation (due to rising sea levels and land subsidence), increasing storm intensity, aging infrastructure, uneven enforcement of building codes, lack of adequate zoning ordinances, poor planning and construction, continued development in high-risk areas, and the inexperience of coastal dwellers to prepare for and recover from these events. The frequency of "sunny day" flooding alone has doubled since 2000 in the United States. Exacerbated by sea level rise, these events overwhelm sewage treatment plants and public utilities, disrupt transportation corridors, reduce property values of homes and businesses, and threaten public health. In addition, many regions may be at increased risk of anthropogenic disasters such as oil or chemical spills, which could occur alone or be exacerbated by other hazardous events. Communities of color and low-income communities are often on the frontline of these threats, experiencing the first and worst impacts of changes in climate and weather patterns. Only through knowledge, understanding, preparation and partnerships will communities be able to address the hazards that are uniquely concentrated in coastal counties.

The resilience of our communities—the very safety, security and survival of their residents—depends on how well prepared they are for these threats and for recovery following an event. Community-level preparedness includes a number of considerations, from how individuals prepare to where and how critical infrastructure and buildings are constructed. Resilient communities have residents, businesses and infrastructure that are positioned to reduce the impacts of risks to lives and property. This allows people to return to their homes and businesses, and recover more quickly after an event than in communities that are not as prepared. Resilient commu-

nities also have thriving living shorelines and coastal resources such as mangroves, oyster reefs, barrier dunes, salt marshes, and other natural infrastructure that buffer waves and coastal storms and protect the shoreline from erosion during storms.

Sea Grant is a network of research, education and outreach professionals who work in partnership with universities, communities, and stakeholders. Sea Grant's vision is to enhance the use and conservation of coastal, marine and Great Lakes resources to create a sustainable economy and environment. Sea Grant helps coastal and Great Lakes communities become more resilient through its activities that strengthen the ability of communities to effectively prepare and plan for environmental and economic challenges. Sea Grant has a proven track record of doing this at local, State, regional and national levels in partnership with its stakeholders and like-minded entities. With increased capacity, Sea Grant will help our coastal and Great Lakes communities become more resilient. Expanding Sea Grant's resilience portfolio will protect lives, sustain critical infrastructure, protect and restore critical natural resources, enhance economic opportunity and recovery from the COVID pandemic, and support more rapid economic recovery after events. Sea Grant is recognized for its ability to develop locally relevant solutions to build coastal community resilience. Sea Grant's strength lies in its ability to work effectively at the local government and community level with tailored information, guidance and support.

To address coastal resilience issues more adequately, the Sea Grant Association recommends an increase in base funding for Sea Grant of at least $25 million. This investment would focus on two major areas:

—Capacity building ($10M) to support recruitment of additional resilience extension, communication or education staff in each State Sea Grant program and support a national coordinator and;

—Research, engagement, decision support, implementation ($15M) proposed to be directly allocated to each State Sea Grant program to support local State-based research, training, technical assistance and coordination that enhance community resilience.

QUANTIFYING SEA GRANT'S CONTRIBUTION TO COASTAL COMMUNITIES

Within Sea Grant, 20 national office staff, 34 university-based State programs, 646 extension staff and educators, 488 researchers, and at least 2,700 partners are funded and leveraged to cooperatively reach the program's goals. Sea Grant's mission is to address the needs of America's coastal and Great Lakes communities using the best available science, beginning with an understanding of the needs of diverse stakeholders. Since its inception Sea Grant has been at the forefront of actionable science addressing priorities of national, State, and local importance. Sea Grant has coordinated efforts to solve problems locally and regionally, emphasizing partnerships, meeting stakeholder needs, and using feedback from end-users to inform research, with a $412.4 million economic benefit from an $80 million Federal investment in 2019. In addition, in 2019, Sea Grant created or supported 10,400 jobs; created or sustained 998 businesses; provided the 34 State-level programs with funding that assisted 263 communities improve their resilience; helped nearly 13,000 people adopt safe and sustainable fishing practices; helped restore or protect an estimated 1.8 million acres of habitat; worked with over 1000 industry and private sector, local, State and regional partners; and supported the education and training of nearly 2000 undergraduate and graduate students.

Sea Grant's locally based staff and specialists collaborated with governments, academia, industries, non-profit groups, and individuals to ensure thriving coastal and Great Lakes communities. Just as it has done in response to hurricanes, oil spills, and other environmental and economic challenges, Sea Grant in 2020 learned how to draw from past experiences to use its strengths to support its constituents during the COVID–19 pandemic. Sea Grant's credibility in scientific and disaster communications was an advantage to coastal and Great Lakes communities around the Nation by providing online resources to enhance at-home STEM education, assisting the seafood industry and other coastal businesses in their direct marketing of their products, navigating the complexities of Federal and State assistance programs, and working quickly to find innovative ways to connect with and support their stakeholders.

Sea Grant sends 95 percent of its appropriated funds to coastal States through a competitive process to address issues that are identified as critical by public and private sector constituents and coastal communities throughout the United States. Sea Grant fosters cost-effective partnerships among State universities, State and local governments, NOAA, and coastal communities, businesses, and relevant nongovernmental organizations. Funding for Sea Grant results in support for sustainable fisheries and aquaculture, resilient communities and economies, healthy coastal

ecosystems, environmental literacy, the Sea Grant Knauss Fellows and other fellowship programs, and workforce development. In its 50 plus-year history, Sea Grant's successes can be attributed to its ability to respond to the changing needs of our coastal communities.

Local, State, regional, and national partnerships are critical to addressing issues central to the survival of our coastal communities, economies, and ecosystems. Coastal and Great Lakes communities need to be informed, engaged, and prepared to respond to these threats and to turn these adversities into opportunities. This is precisely what Sea Grant does.

Sea Grant has been an integral player in creating economic opportunities, enhancing food and water security, and reducing risks from natural hazards and extreme events facing coastal communities through research and outreach efforts. Sea Grant is user-driven and university-based, and fully engaged with regional, State, and local organizations.

With the funding recommendations contained in this statement, Sea Grant will leverage significant State and local support, continue to increase the economic development and resiliency of coastal communities—particularly coastal communities of color, and help sustain the health and productivity of the ecosystems on which our communities depend.

Thank you for the opportunity to present this testimony.

[This statement was submitted by Dr. Susan White, President.]

PREPARED STATEMENT OF THE SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS (SIAM)

FISCAL YEAR 2022 FOR THE NATIONAL SCIENCE FOUNDATION

Summary: This written testimony is submitted on behalf of the Society for Industrial and Applied Mathematics (SIAM) to ask you to continue your support of the National Science Foundation (NSF) in fiscal year 2022 by providing NSF with at least $10 billion. In particular, we urge you to provide strong support for the Research and Related Activities Account (R&RA) that supports key applied mathematics and computational science programs in the Division of Mathematical Sciences and the Office of Advanced Cyberinfrastructure. SIAM also requests your support for the Education and Human Resources (EHR) directorate that addresses fundamental challenges in mathematics and STEM education.

Full Statement: On behalf of SIAM, we submit this written testimony for the record to the subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the U.S. Senate.

SIAM has over 14,000 members, including applied and computational mathematicians, computer scientists, numerical analysts, engineers, statisticians, and mathematics educators. They work in industrial and service organizations, universities, colleges, and government agencies and laboratories all over the world. In addition, SIAM has almost 500 institutional members, including colleges, universities, corporations, and research organizations. SIAM members come from many different disciplines but have a common interest in applying mathematics in partnership with computational science to solve real-world problems, which affect national security and industrial competitiveness.

First, we would like to emphasize how much SIAM appreciates your Committee's continued leadership on and recognition of the critical role of the National Science Foundation (NSF) and its support for mathematics, science, and engineering in enabling a strong U.S. economy, workforce, and society.

Today, we submit this testimony to ask you to continue your support of NSF in fiscal year 2022 and beyond. *In particular, we join with the research and higher education community and request that you provide NSF with at least $10 billion in funding for fiscal year 2022.* This is consistent with the President's budget request for fiscal year 2022 that calls for $10.2 billion. After years of inadequate funding, NSF needs bold growth to protect U.S. competitiveness as countries such as China are rapidly increasing their science and engineering investments. According to the National Science Board, in fiscal year 2017, NSF rejected close to four billion dollars of proposals rated "very good or higher" due to budget constraints. Funding of $10 billion would help the agency address critical unmet national research needs, reverse historical underinvestment, and allow new activities related to translation, innovation, and partnerships that will enable expanded approaches to critical technologies and science and engineering solutions.

As we are reminded every day, the Nation's health, economic strength, national security, and welfare are being challenged in profound and unprecedented ways.

Many of these challenges are fueled by gaps in our understanding of complex systems such as biologic processes, the energy grid, cyberspace, terrorist networks, or the human brain. Mathematics and computational science play a foundational and cross-cutting role in understanding these systems through advanced modeling and simulation, developing techniques essential to designing new breakthrough technologies like artificial intelligence (AI), and providing new tools for managing resources and logistics. Progress in computational sciences and applied mathematics also underpins advances across an array of fields and challenges in computing, materials, biology, engineering, and other areas.

NATIONAL SCIENCE FOUNDATION

NSF serves a unique and critical function supporting all areas of science and engineering to further innovation and seed the knowledge and technologies for a strong future America. NSF provides essential Federal support for applied mathematics and computational science, including more than 60 percent of all Federal support for basic academic research in the mathematical sciences. Of particular importance to SIAM, NSF funding supports the development of new mathematical models and computational algorithms, which are critical to making substantial advances in such fields as neuroscience, energy technologies, genomics, and nanotechnology. In addition, new techniques developed in mathematics and computing research often have direct application in industry. Modern life as we know it—from search engines like Google to the design of modern aircraft, from financial markets to medical imaging—would not be possible without the techniques developed by mathematicians and computational scientists using NSF funding. NSF also supports mathematics education at all levels, ensuring that the next generation of the U.S. workforce is appropriately trained to participate in cutting-edge technological sectors and that students are attracted to careers in mathematics and computing.

SIAM applauds NSF's investments in Industries of the Future areas with programs such as the AI Institutes, Institutes for Data-Intensive Research in Science and Engineering, Quantum Leap Challenge Institutes, TRIPODS[1] Institutes, and the NSF-Simons Research Centers for Mathematics of Complex Biological Systems. Furthermore, SIAM supports the new Directorate for Technology, Innovation, and Partnerships (TIP) included in the President's budget request for NSF. SIAM applauds the aims of the new proposed Directorate to advance science and engineering research and innovation, accelerate the translation of basic research, solve national and societal problems, and support education pathways. While investment in emerging areas like AI is important, SIAM urges Congress to provide sufficient NSF support for core programs, such as those funded by the Division of Mathematical Sciences (DMS) and the Office of Advanced Cyberinfrastructure (OAC), which have stagnated in recent years and whose foundational investments underpin advances across many science and engineering challenges.

SIAM urges strong investment in the Research and Related Activities account (R&RA) to enable robust funding for the Division of Mathematical Sciences (DMS), the Office of Advanced Cyberinfrastructure (OAC), and other core programs and crosscutting initiatives for essential mathematical and computational science research, workforce development programs, and early career researcher support.

NSF DIVISION OF MATHEMATICAL SCIENCES

The NSF Division of Mathematical Sciences (DMS) in the Directorate for Mathematical and Physical Sciences (MPS) provides core support for all mathematical sciences. DMS also funds national mathematical science research institutes; infrastructure, including workshops, conferences, and equipment; and postdoctoral, graduate, and undergraduate training.

The activities supported by DMS and performed by SIAM members, such as modeling, analysis, algorithms, and simulation, underpin advancements across science and engineering and provide new ways of obtaining insight into the nature of complex phenomena, such as the power grid, software for military applications, and the human body.

Investment in DMS is critical because of the foundational and cross-cutting role that mathematics and computational science play in sustaining the Nation's economic competitiveness and national security, and in making substantial advances on societal challenges such as energy and public health. NSF, with its support of a broad range of scientific areas, plays an important role in bringing U.S. expertise together in interdisciplinary initiatives that bear on these challenges. Agencies such

[1] Transdisciplinary Research on Principles of Data Science

as the Department of Defense and National Institutes of Health depend on the NSF-supported applied math and computational sciences ecosystem to fulfill their missions as they build on NSF-funded modeling, algorithm, and simulation breakthroughs and leverage the workforce trained using NSF support. Both agencies and foundations partner with NSF thereby leveraging Federal funding for maximum impact, such as with the Joint NSF/National Institutes of Health Initiative Quantitative Approaches to Biomedical Big Data (QuBBD).

NSF OFFICE OF ADVANCED CYBERINFRASTRUCTURE

Work in applied mathematics and computational science is critical to enabling effective use of the rapid advances in information technology and cyberinfrastructure. Programs in the NSF Office of Advanced Cyberinfrastructure (OAC) in the Directorate for Computer and Information Science and Engineering (CISE) focus on providing research communities access to advanced computing capabilities to convert data to knowledge and increase our understanding through computational simulation and prediction. SIAM strongly endorses OAC's efforts as a steward for computational science, building bridges across NSF to accelerate transformational science and engineering, and driving universities to improve their research and education programs in this multidisciplinary area. SIAM strongly endorses NSF's role advancing high performance computing to meet critical national security needs, fully leverage computing technology for economic competitiveness and scientific discovery, and position the U.S. for sustained technical leadership.

SUPPORTING THE PIPELINE OF MATHEMATICIANS AND SCIENTISTS

A lack of sufficient funding for NSF's Education and Human Resources (EHR) directorate has left critical gaps in addressing fundamental challenges for mathematics and STEM education across educational levels. SIAM supports EHR and its programs like *Improving Undergraduate STEM Education* (IUSE), which is key to both advancing STEM professional development and developing a STEM literate citizenry. SIAM notes that mathematical education is foundational to STEM learning across disciplines, and NSF should continue to fund development of mathematical and computational skills, including at the undergraduate level when young scientists and engineers gain critical interests and competencies.

SIAM supports the NSF *CAREER awards, Graduate Research Fellowships,* and *Mathematical Sciences Postdoctoral Research Fellowships (MSPRF)* that are crucial to the training and professional development of the next generation of leadership in mathematical sciences research and education.

CONCLUSION

We would like to thank you again for your ongoing support of NSF that enables the research and education communities it supports, including thousands of SIAM members, to undertake activities that contribute to U.S. health, security, and economic strength. NSF needs sustained growth to maintain our competitive edge in science and technology, and therefore we respectfully ask that you continue robust support of these critical programs in fiscal year 2022.

We appreciate the opportunity to provide testimony to the Committee on behalf of SIAM. SIAM looks forward to providing any additional information or assistance you may ask of us during the fiscal year 2022 appropriations process.

[This statement was submitted by Susanne C. Brenner, President, Anne Gelb, Vice President for Science Policy, and Suzanne L. Weekes, Executive Director.]

PREPARED STATEMENT OF THE SOCIETY FOR INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

FISCAL YEAR 2022 NATIONAL SCIENCE FOUNDATION APPROPRIATIONS AND LANGUAGE

On behalf of the Society for Industrial and Organizational Psychology (SIOP), we are pleased to provide this written testimony to the Senate Appropriations subcommittee on Commerce, Justice, and Science, and Related Agencies for the official record. In this testimony, SIOP urges the subcommittee to consider two requests: provide the requested amount of $10.2 billion for the National Science Foundation (NSF), including strong support for the Directorate for Social, Behavioral, and Economic Sciences (SBE), in the fiscal year 2022 appropriations process; and report language to encourage NSF to more rigorously implement the science of team science in the agency's funding strategies for large-scale and multi-disciplinary research projects.

Appropriations Support

SIOP is a community of nearly 10,000 members worldwide with a common interest in promoting the research, practice, and teaching of industrial and organizational (I–O) psychology to enhance human well-being and performance in organizational and work settings. SIOP provides a platform for scientists, academics, consultants, and practitioners to collaborate, implement, and evaluate cutting-edge approaches to workplace challenges across sectors.

We have evidence that Federal investment in social and behavioral science research directly and positively impacts the U.S. economy, national security, and the health and well-being of Americans. Through SBE, NSF supports basic research to develop a scientific evidence base for improving the performance, effectiveness, management, and development of organizations and the workforce. The methods, measurements, and theories developed through this Federal investment enhance business practices, policymaking, and interprofessional collaboration. The evidence base derived from basic research in the science of organizations is applied throughout the public and private sectors.

SBE is critically important to NSF and has been highly responsive to the transformative events of the past year. This was especially evident during the COVID–19 outbreak when SBE supported the second most research grants to address the virus among NSF Directorates. This included significant support for the field of I–O psychology as the nature of work had fundamentally shifted. Through SBE investments, including those from the Science of Organizations program, I–O psychologists developed data-driven methods to address workplace dysfunction, including impacts on employee well-being, work-life balance, performance, and engagement; the effects of rapid changes to workers across various levels of job structure, socioeconomic status, and race; and the challenges and opportunities related to remote collaboration during COVID–19 and as industries shift to a "new normal." Further, SBE provided support to I–O psychologists to study other pressing issues, including how job-related stressors impact police officers and, in turn, the communities they serve. With support from SBE for I–O psychologists, society is better positioned to learn from our collective experiences and design more effective, equitable workplaces.

SIOP also supports NSF's dedication to its *Future of Work at the Human-Technology Frontier* Big Idea, which seeks to address and improve human-technology interactions as workplaces integrate and adapt to artificial intelligence, automation, machine learning, and beyond. In addition to developing these technologies, successful implementation relies on understanding human learning at various stages of life, and improving education and training to appropriately use these technologies.

Continued Federal support for I–O psychology keeps its knowledge and expertise in the public domain and enhances shared workplace efficiency and understanding of worker well-being at all levels. Other applications of I–O psychology include: transitioning veterans and service members to civilian jobs, managing age diversity in the workplace, accounting for the technology-enabled workforce, and developing preventative sexual harassment workforce interventions, among many others.

Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, SIOP supports an overall fiscal year 2022 NSF budget of $10.2 billion. SIOP requests robust support for the NSF SBE Directorate, which funds important research studies, enabling an evidence base, methodology, and measurements for improving organizational function, performance, and design across sectors and disciplines.

Science of Team Science

In last year's testimony, SIOP requested report language to encourage the further adoption of the Science of Team Science (SciTS) in NSF programs and policies. SciTS is the empirical examination of the processes by which large and small scientific teams organize, conduct, and communicate research. I–O psychologists with expertise in SciTS have engaged with NSF program officers and leadership, as well as some congressional staff to ensure their findings are fully ingrained in the agency's new models and approaches for funding cross-disciplinary science and/or large-scale research projects (e.g. Engineering Research Centers; Science and Technology Centers; Convergence Accelerators; and National Artificial Intelligence [AI] Institutes). As NSF increasingly encourages and promotes collaboration, SIOP believes it is important that the agency take additional steps to ensure evidence-based team science is considered in multi-partner initiatives to improve communication between researchers, productivity, efficiency and cost-effectiveness. This is especially important as NSF continues to focus on public-private partnerships.

In fiscal year 2020, the House Appropriations bill report included the following language that was in the spirit of the original request:

"Scientific collaboration.—NSF is encouraged to improve the understanding of scientific collaboration and how scientists work together." [1]

While this language was most appreciated and helpful, SIOP is of the opinion that the message would be more impactful if it were to specifically mention the importance of "team science" in multi-disciplinary research programs and projects.

Team science is a well-known research subject at NSF and the language should be understood by the agency. NSF has funded several team science studies through SBE and program officers across directorates have expressed interest in leveraging team science to improve multi-disciplinary awards, including participating in one-on-one conversations with SIOP experts and inviting them to present on NSF panels. SIOP appreciates NSF's interest in learning more about leveraging SciTS to improve programs and collaborations at the agency. While NSF has taken some steps forward to address the importance of team science in some multi-disciplinary awards, we feel that appropriations report language that specifically mentions the importance of team science would build on this existing momentum and further catalyze meaningful action.

For further reference, SIOP members served on the National Academies' Committee on the Science of Team Science, which produced the 2015 report on this topic: https://www.nap.edu/catalog/19007/enhancing-the-effectiveness-of-team-science. Also, slides and recordings from NSF's 2018 Accelerating Engineering Research Center Preparedness Workshop can be found at: https://ercbiennial.asee.org/2018-pgw/program/. SIOP members Drs. Steve Kozlowski and Kara Hall present on team science.

Requested Report Language

Team Science.—NSF is encouraged to continue to seek ways to implement the science of team science to improve scientific collaboration as the agency develops new models and approaches for funding large-scale and cross-disciplinary research projects. In particular, NSF is encouraged to ensure that it is implementing the recommendations from the National Academies of Sciences, Engineering, and Medicine report, Enhancing the Effectiveness of Team Science.[2]

Thank you for the opportunity to offer SIOP's support for NSF. Please do not hesitate to contact SIOP should you have any questions. Additional information is also available at www.siop.org.

[This statement was submitted by Dr. Steven Rogelberg, President, and Tracy L. Vanneman, Executive Director.]

PREPARED STATEMENT OF THE SOCIETY FOR NEUROSCIENCE

SUPPORT OF FISCAL YEAR 2022 APPROPRIATIONS FOR THE NATIONAL SCIENCE FOUNDATION

Chair Cartwright, Ranking Member Aderholt, and Members of the subcommittee, on behalf of the Society for Neuroscience (SfN), we are honoured to present this testimony in support of robust appropriations for biomedical research at the National Science Foundation (NSF). SfN urges you to provide at least $10.2 billion, an increase of approximately $1.7 billion, in funding for NSF in fiscal year 2022. Dr. Moses Chao and I, as Chair of the Government and Public Affairs Committee and President of SfN respectively, understand the critical importance of Federal funding for neuroscience research in the United States. I currently serve as a researcher and as a Professor in the Department of Psychology at Cambridge University and Dr. Chao is a professor of Cell Biology, Physiology and Neuroscience, and Psychiatry at the New York University School of Medicine. Our research serves as two examples of the wide variety of neuroscience research advancing our collective understanding of the brain.

My own research focuses on the neural and psychological basis of drug addiction and is dedicated to understanding the maladaptive engagement of the learning, memory, and motivational mechanisms underlying compulsive drug use. Drug abuse and addiction have devastating consequences at the individual, family, and society levels, as clearly evidenced by the opioid crisis and also increased alcohol drinking during pandemic lockdowns. My research group made significant advances in showing structural and neurochemical changes in the brain associated with behavioral

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[1] https://appropriations.house.gov/sites/democrats.appropriations.house.gov/files/FY2020%20CJS%20CJS%20Filed%20Report%20-%20HR3055.pdf

[2] https://www.nap.edu/catalog/19007/enhancing-the-effectiveness-of-team-science

impulsivity confer a major risk on vulnerability to develop cocaine addiction. We also demonstrated the neural circuit basis of the transition from recreational to the compulsive use of opioids, stimulants, and alcohol, revealing commonalities as well as differences in the neural basis of addiction to these drugs. This understanding opened the door to the development of novel pharmacological and psychological treatments for addiction which may promote and maintain abstinence from drug use.

Dr. Chao's research efforts focus on growth factors (also called neurotrophins) in the brain. These proteins are crucial for everything from neuron differentiation, growth, and survival during development to learning and memory in children and adults. Deficits in neurotrophins are involved in neurodegenerative disorders such as Alzheimer's, Parkinson's and Huntington's diseases, and Amyotrophic Lateral Sclerosis (ALS), as well as limiting recovery after stroke or brain injury.

Dr. Chao and I cover different areas of neuroscience research, though we have come together to convey the need for further and ongoing investment in neuroscience research. SfN believes strongly in the research continuum: basic science leads to clinical innovations, which lead to translational uses positively impacting the public's health. Basic science is the foundation upon which all health advances are built. To cure diseases, we need to understand them through fundamental discovery-based research. However, basic research depends on reliable, sustained funding from the Federal Government. SfN is grateful to Congress for its support of the important mission of the NSF, which includes a focus on promoting the progress of science and advancing the National health, prosperity, and welfare, through increased appropriations in recent years.

THE IMPORTANCE OF THE RESEARCH CONTINUUM

NSF funding for basic research is critical for facilitating groundbreaking discoveries and for training researchers at the bench. For the United States to remain a leader in biomedical research, Congress must continue to support basic research fueling discoveries as well as the economy. The deeper our grasp of basic science, the more successful those focused on clinical and translational research will be. We use a wide range of experimental and animal models not used elsewhere in the research pipeline. These opportunities create discoveries—sometimes unexpected discoveries—expanding knowledge of biological processes, often at the molecular level. This level of discovery reveals new targets for research to treat all kinds of brain disorders that affect millions of people in the United States and beyond.

NSF basic research funding is also a key economic driver of science in the United States through funding universities and research organizations across the country. Federal investments in scientific research fuel the Nation's pharmaceutical, biotechnology and medical device industries. The private sector utilizes basic scientific discoveries funded through NSF to improve health and foster a sustainable trajectory for American's Research and Development (R&D) enterprise. Basic science generates the knowledge needed to uncover the mysteries behind human diseases, which leads to private sector development of new treatments and therapeutics. This important first step is not ordinarily funded by industry given the long-term path of basic science and the pressures for shorter-term return on investments by industry. Congressional investment in basic science is irreplaceable in the pipeline for development of drugs, devices, and other treatments for brain-related diseases and disorders.

Another example of NSF's success in funding neuroscience is the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative. A part of the research landscape in neuroscience, the BRAIN Initiative has been critical in promoting future discoveries across neuroscience and related scientific disciplines. By including funding in 21st Century Cures, Congress helped maintain the momentum of this endeavor. Note, however, using those funds to supplant regular appropriations would be counterproductive. There is no substitute for robust, sustained, and predictable funding for NSF. SfN appreciates Congress' ongoing investment in the BRAIN Initiative and urges its full funding in fiscal year 2022. Some recent exciting advancements in NSF funded neuroscience research include the following:

Increasing happiness through new experiences

As COVID–19 has affected Americans' daily routines, NSF-funded research may point the way towards strategies to improve people's moods. In a study conducted before the pandemic, participants wore GPS trackers for several months and reported on their mood throughout each day. The researchers found a correlation between a more positive mood and days when participants went to more locations outside of their daily routine. When people had more variability in their day, they were more likely to report feeling "happy," "relaxed," or "excited." A follow-up study look-

ing at functional magnetic resonance imaging (fMRI) scans of participants' brains found these positive changes in mood are driven by communication between the hippocampus, the part of the brain that maps the environment, and the striatum, which plays a key role in reward. This work suggests adding a variety of experiences, even something as simple as a walk around the neighborhood, to our daily lives may be critical to maintaining a positive outlook.

Understanding the origins of creativity

Music, art, and other creative activities are fundamental endeavors to the human experience. Where this creativity comes from in the human brain and how it is controlled, however, is a question of great debate. Researchers funded by the NSF sought to answer this question by studying jazz guitarists performing while wearing electroencephalography (EEG) caps to measure their brain activity. These guitarists, who ranged in experience from novices to professionals, were asked to improvise several performances, which were recorded and judged by experts. Brain-activity data showed less-experienced guitarists relied more on right frontal hemisphere structures associated with conscious control over activity, while more-experienced participants had more activity in structures associated with the default mode network, suggesting their performances require less active control. This suggests as a creative endeavor is improved, the brain switches from conscious monitoring of the activity to a more automatic reliance on what has already been learned. This baseline knowledge reduces the active concentration an expert will need for these learned skills, allowing for more cognitive resources to be devoted to the creativity of their output.

COVID–19 IS A CHALLENGE AND OPPORTUNITY FOR NEUROSCIENCE RESEARCH

Unfortunately, the COVID–19 pandemic has slowed progress in neuroscience research, with social distancing requirements hampering ongoing research related to the brain. Investment in neuroscience research, including on the neurological aspects of the SARS-CoV–2 virus and the COVID–19 pandemic itself is needed though cannot be allowed to eclipse or replace regular funding for neuroscience research. We urge you to identify ways to ensure the funding surge needed to address the COVID–19 emergency does not slow progress on other important and innovative research, including the groundbreaking research in neuroscience and mental health. SfN encourages the subcommittee to fund basic research on the biology of how COVID–19 impacts brain function as well as impacts the virus has on the nervous system in preclinical models and, by extension, on humans. In doing so, SfN encourages Congress and the NSF to prioritize intentional collaboration and coordination to effectively allocate scarce resources so researchers can investigate all facets of infectious and non-infectious disease.

Ongoing research already demonstrates the need for scientists to examine the neurological impacts of COVID–19. While mortality due to SARS-CoV–2 may be primarily due to its effects on the lungs, it is now apparent the virus damages many other organs, including the central nervous system. We need to understand how these direct and indirect effects on other organ systems are producing chronic diseases and long-term disability, making people more susceptible to other chronic disorders covered by the different NIH Institutes. A recent study (Lancet article, Taquet et al 2021) shows an increased risk of anxiety, depression, post-traumatic stress disorder, and insomnia were reported after COVID–19 diagnosis. These data, though incomplete, suggest brain impairment may be associated with COVID–19 infection. Furthermore, it was found people with two copies of the risk gene for Alzheimer's disease were more likely to have severe COVID–19 (Kuo et al J. Gerontology 2020). These findings, coupled with incidents of memory loss, brain fog and hallucinations reported in the New York Times (3/23/21) illustrates a need for increased resources to study the impact of this virus on the peripheral and central nervous systems, as well as the immune and inflammatory systems. The COVID–19 public health emergency provides an important example of the critical need for collaborative research and coordinating data and resources across institutes. A balanced and collaborative research effort across institutes will likely be the path toward solving these multiple issues.

CONGRESS & NSF MUST SUPPORT ACCESS TO MODELS NECESSARY FOR NEUROSCIENCE DISCOVERY

Adequate NSF funding is necessary to advancing our understanding of the brain; however, full realization of this funding's promise requires appropriate access to research models, including non-human primate and other animal models. Animal research is highly regulated to ensure ethical and responsible care and treatment of

the animals. SfN and its members take their legal and ethical obligations related to this research very seriously. While SfN recognizes the goal of the reduction, refinement, and eventual replacement of nonhuman primate models in biomedical research, much more research and time is needed before such a goal is attainable. Premature replacement of non-human primate and other animal models may delay or prevent the discovery of treatments and cures-not only for neurological diseases like Alzheimer's disease, addiction, and traumatic brain injury, but also for communicable diseases and countless other conditions. There are currently no viable alternatives available for studying biomedical systems advancing our understanding of the brain and nervous system; or when seeking treatments for diseases and disorders like depression, addiction, Parkinson's Disease, and emotional responses. This research is critically important and presents an opportunity to benefit countless people around the world. SfN urges Congress to work with the NSF to ensure this important research can continue.

FUNDING IN REGULAR ORDER

SfN joins the biomedical research community supporting an increase in NSF funding to at least $10.2 billion, a $1.7 billion increase over FY21. This proposed increase is necessary to provide certainty to the field of science, allowing for the exploitation of new scientific opportunity, additional training of the next generation of scientists, increased economic growth and further improvements in the public's health. Equally as important as providing a reliable increase in funding for biomedical research is ensuring funding is approved before the end of the fiscal year. Continuing Resolutions have significant consequences on research, including restricting NSF's ability to fund grants. For some of our members, this means waiting for a final decision to be made on funding before knowing if their perfectly scored grant would in fact be realized or operating a lab with 90 percent of the awarded funding until appropriations are final. This negatively impacts all the positive benefits research provides the field. SfN strongly supports the appropriation of NSF funding in a timely manner which avoids delays in approving new research grants or causes reductions in funding for already approved research funding.

SfN thanks the subcommittee for your strong and continued support of biomedical research and looks forward to working with you to ensure the United States remains the global leader in neuroscience research and discovery. Collaboration among Congress, the NSF, and the scientific research community has created great benefits for not only the United States but also people around the globe suffering from brain-related diseases and disorders. On behalf of the Society for Neuroscience, we urge you to continue this critical cooperation and support of biomedical research.

[This statement was submitted by Barry Everitt, Sc.D., F.R.S., President, and Moses Chao, PhD, Chair, Government and Public Affairs Committee.]

PREPARED STATEMENT OF THE TRIBAL LAW AND POLICY INSTITUTE

DEPARTMENT OF JUSTICE

On behalf of the Tribal Law and Policy Institute (TLPI), this testimony addresses important programs in the Department of Justice (DOJ). First, TLPI joins the American Bar Association (see attached letter) in requesting substantially increased funding for Tribal courts in response to the $1.2 billion annual shortfall for Tribal courts as identified in the Bureau of Indian Affairs (BIA) 2020 report to Congress, *Report to the Congress on Spending, Staffing, and Estimated Funding Costs for Public Safety and Justice Programs in Indian Country, 2018.*

Secondly, TLPI joins the National Congress of American Indians (NCAI) in requesting:

Program	NCAI Fiscal Year 2022 Request
DOJ: Tribal Grants: Eliminate competitive grant funding process and utilize Justice Department appropriations as base funding so that Tribal nations determine their own priorities.	Use DOJ appropriations as base funding.
DOJ: Tribal Set-Aside from Office of Justice Programs (OJP) ..	Create a 10 percent Tribal set-aside for all discretionary OJP programs.
DOJ: Tribal Set-Aside from Crime Victims Fund	Create a 5 percent set-aside for Tribal governments.
DOJ: Tribal Youth Program under the Juvenile Accountability Block Grants program.	$25,000,000
DOJ: Tribal Civil and Criminal Legal Assistance (TCCLA) Grant.	$3,000,000
DOJ: Community Oriented Policing Services (COPS) Tribal Law Enforcement.	$52,000,000
DOJ: OVW Tribal programs under the Violence Against Women Act (VAWA).	Fully fund all VAWA-authorized programs including the Sexual Assault Clearinghouse and $5,000,000 for Tribal implementation of VAWA special domestic violence criminal jurisdiction.

TLPI is a 100 percent Native American operated non-profit corporation organized to design and deliver education, research, training, and technical assistance programs which promote the enhancement of justice in Indian country and the health, well-being, and culture of Native peoples. TLPI focuses on collaborative programs that provide critical resources for Tribal court systems and other programs involved in promoting improvement of justice in Indian country.

The Federal Government's trust responsibility to Tribal nations is at the heart of TLPI's recommendation to follow NCAI's fiscal year 2022 Indian country budget request. Like all other governments, Tribal nations are responsible for the protection and care of their citizens, residents, and visitors on Tribal lands. Through treaties and other agreements, Tribal lands were ceded in exchange for the promise of protected self-governance and adequate resources from the United States. Those promises are the foundation of the government-to-government relationship that exists today.

Part of the Federal trust responsibility to Indian Tribes includes basic governmental services in Indian Country, funding for which is appropriated in the discretionary portion of the Federal budget. Tribal governments protect and preserve their unique cultures, identities, and natural environments for future generations. As governments, Tribes must deliver a wide range of critical services, such as education, workforce development, youth programs, and first-responder and public safety services, to their citizens. The Federal budget for Tribal governmental services reflects the extent to which the United States honors its promises to Indian people—and to date, those promises have not been truly honored.

Tribal justice systems historically have been under-funded and continue to be under-funded in most Tribal communities. In 1991, the United States Civil Rights Commission found that "the failure of the United States Government to provide proper funding for the operation of Tribal judicial systems . . . has continued for

more than 20 years."[1] In 2014, the Attorney General's Advisory Committee on American Indian and Alaska Native Children Exposed to Violence noted that Department of Justice (DOJ) funding for Tribal justice systems has been consistently decreasing in recent years.[2] The Indian Law and Order Commission (ILOC) noted that in addition to funding shortfalls, DOJ's short-term, competitive funding approach is deficient because it reflects Federal priorities rather than Tribal ones, favors hired grant-writers, requires Tribes to compete against each other, and offers only 3-year programs that often leave Tribes with staff turnover and short-term programs.[3]

Further, the Civil Rights Commission continued reporting on this topic with *A Quiet Crisis: Federal Funding and Unmet Needs in Indian Country* in 2003 and *Broken Promises: Continuing Federal Funding Shortfall for Native Americans* in 2018. *Broken Promises* found that "Federal funding for Native American programs across the government remains grossly inadequate to meet the most basic needs the Federal Government is obligated to provide . . . Since 2003, funding for Native American programs has mostly remained flat, and in the few cases where there have been increases, they have barely kept up with inflation or have actually resulted in decreased spending power."[4]

Finally, in 2020, the BIA submitted a report to Congress, *Report to the Congress on Spending, Staffing, and Estimated Funding Costs for Public Safety and Justice Programs in Indian Country, 2018.* The total annual estimated need for Tribal public safety and justice programs included $1.3 billion for Tribal law enforcement and $1.2 billion for Tribal courts. According to the same report, BIA funding only meets 14.7 percent of estimated need. Leaving Tribes to fight for short-term funds via competitive grant processes, many administered by the DOJ.

DOJ funding across programs affecting Indian country should be dramatically increased and the distribution mechanism modified. As nations, Tribes should not have to compete for short-term grants that reflect Federal priorities. Rather, funds should be allocated as flexible base funding.

Create a 10 percent Tribal allocation across all Office of Justice Programs (OJP) programs.—A 10 percent OJP Tribal set-aside would simplify the Federal funding process by which Tribal nations receive resources to establish Tribal courts; assist in developing detention facilities; provide legal assistance; develop and maintain juvenile delinquency prevention programs; and provide substance abuse prevention programs. Further, the Tribal set-aside provides Tribes the flexibility to develop a comprehensive strategy on public safety and justice needs. It also would create new opportunities for coordinating BIA and DOJ funding to reduce inefficiencies and unnecessary administrative costs.

Include Tribal governments in disbursements from the Crime Victims Fund.—The Crime Victims Fund (CVF) is the Federal Government's primary funding source for providing services to victims of crime. Unlike State and territorial governments, which receive an annual formula distribution from the CVF, Indian Tribes were only able to access CVF funds via pass-through grants at the discretion of the States or by competing for very limited resources administered by the DOJ. This system left a significant unmet need in most Tribal communities-communities where crime victimization rates far exceed the National average.

For the past 4 years, Congress has directed a portion of the overall disbursements from the CVF to Tribal nations. The 5 percent Tribal set-aside included in the fiscal year 2021 appropriations bill will direct $100.75 million to support and improve crime victim services on Tribal lands. This funding greatly impacts crime victims' services infrastructure on Tribal lands, and it is imperative that it be appropriated on an annual basis to sustain the programs and services that will be developed. TLPI urges the committee to keep disbursements from the CVF at the increased level and to direct an amount equal to 5 percent of overall CVF disbursements to Tribal governments on a non-competitive basis.

If Congress declines to adopt the flexible 10 percent set-aside across OJP programs, restore fiscal year 2010 levels of $25 million in funding for the Tribal Youth Program (TYP) under the Juvenile Accountability Block Grants Program.—Native youth liv-

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[1] United States Commission on Civil Rights, *The Indian Civil Rights Act: A Report of the United States Commission on Civil Rights* 71 (June 1991).

[2] Attorney General's Advisory Committee on American Indian and Alaska Native Children Exposed to Violence, U.S. Dep't of Justice, *Report of the Advisory Committee on American Indian and Alaska Native Children Exposed to Violence: Ending Violence So Children Can Thrive* 53 (November 2014).

[3] Indian Law and Order Commission, *A Roadmap for Making Native America Safer: Report to the President & Congress of the United States* 83 (2013).

[4] United States Commission on Civil Rights, *Broken Promises: Continuing Federal Funding Shortfall for Native Americans,* 4 (December 2018).

ing in Indian country face numerous overlapping barriers to safety, wellness, academic achievement, and positive youth development. Barriers occur at the individual, family, community, and regional levels, resulting in disproportionate involvement with juvenile justice, child welfare, and other youth-serving systems. Today's Native youth continue to face the effects of collective intergenerational and historical traumas.

TYP is the first OJJDP program dedicated to prevention, intervention, and juvenile justice system improvement in Native communities. The need for the program can be demonstrated by the application rates within the last 5 years. For the majority of those years, the DOJ Coordinated Tribal Assistance Solicitations, Purpose Area 9 (TYP) received some of the highest number of grant applicants and categorically received the least amount of funding. Further exacerbating the issue, TYP is currently funded at some of its lowest levels since its establishment in the 1990s. This is despite an increase in funding in fiscal year 2021, the first increase in 3 years. Due to this decreased funding, hundreds of Tribes across the United States are left grappling with how to ensure that their most cherished resource is provided equal opportunity as other youth in this country to heal, thrive, and realize their life potential. Funding for the TYP should, at minimum, be restored to its fiscal year 2010 level of $25 million.

Fund the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance (TCCLA) grant program at a level of $3 million.—The Indian Tribal Justice Technical and Legal Assistance Act of 2000 (Public Law 106–559) authorized DOJ to award grants to non-profit entities, such as the 25 Indian Legal Services programs connected with the Legal Services Corporation (LSC), to provide civil and criminal legal assistance to both Tribal governments and their justice systems and to individual indigent Tribal citizens. Services impacted by this funding include domestic violence, pro se assistance, re-entry and expungements, child welfare, free legal clinics and toll-free hotlines, and much more.

Increase funding of Tribal law enforcement programs under DOJ's Community Oriented Policing Services (COPS) Grants to $52 million.—Since its inception, the COPS Office has awarded more than 2,000 grants totaling over $400 million to Tribes to hire more than 1,700 new or redeployed law enforcement officers. It has helped Tribes obtain necessary law enforcement training, equipment, vehicles, and technology. The COPS Office has also become one of the primary resources available to Tribal law enforcement agencies attempting to develop and maintain policing infrastructure and upgrade outdated equipment. Yet, there is still substantial unmet need within Tribal justice systems for more COPS funding.

Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for the Sexual Assault Clearinghouse and Tribal implementation of VAWA special domestic violence criminal jurisdiction.—It is estimated over 85 percent of American Indian and Alaska Native women will experience violent victimization in their lifetimes.[5] OVW provides funding to Tribal governments to address violence against women in their communities. OVW's largest source of funding for Tribal governments is the Grants to Tribal Governments Program, which is funded via statutory allocations from other OVW programs. Fully-funding these OVW programs results in full funding for the Grants to Tribal Governments Program and for the implementation of Special Domestic Violence Criminal Jurisdiction.

CONCLUSION

Thank you for your consideration of this testimony.

[This statement was submitted by Gerald Gardner, Executive Director.]

PREPARED STATEMENT OF THE UNITED STATES SECTION OF THE PACIFIC SALMON COMMISSION

FISCAL YEAR 2022 BUDGET FOR THE NATIONAL MARINE FISHERIES SERVICE

Mr. Chairman, and Honorable Members of the Committee, I am W. Ron Allen, the Tribal Commissioner and Chair for the U.S. Section Budget Committee of the Pacific Salmon Commission (PSC). I am also the Tribal Chairman/CEO of the Jamestown S'Klallam Tribe located on the Olympic Peninsula of Washington State.

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[5] U.S. Department of Justice, *Violence Against American Indian and Alaska Native Women and Men: 2010 Findings from the National Intimate Partner and Sexual Violence Survey* 2 (2016).

The U.S. Section prepares annual budgets for the implementation of the Pacific Salmon Treaty. The implementation of the Treaty is funded through the Departments of Commerce, Interior and State.

> Department of Commerce funding in support of implementing the Pacific Salmon Treaty is part of the Salmon Management Activities account in the National Marine Fisheries Service (NMFS) budget. The United States and Canada completed negotiations of revised Annex Chapters to the Treaty in 2019. Funding in the Department of Commerce budget intended for the programs to fulfill national commitments created by the revised Treaty Annex Chapters was $39,500,000 in the fiscal year 2021 budget. The U.S. Section recommends fiscal year 2022 funding of $43,500,000 to implement national commitments created by the Treaty. This represents a $4,000,000 increase from fiscal year 2021 funding levels.

The Department of Commerce principally funds programs conducted by the States of Washington, Oregon, Idaho and Alaska and the NMFS. However, the cost of programs conducted by the States to fulfill national commitments created by the Treaty continue to be substantially greater than the funding provided in the NMFS budget. Consequently, the States have supplemented the Federal Treaty appropriations from other sources, including State general funds. Many of those funding sources are limited or no longer available and this has been exacerbated by the ongoing global pandemic.

The $20,000,000 increase in the fiscal year 2020 budget and the $5,000,000 in the fiscal year 2021 budget were greatly appreciated, however it falls short of what the U.S. Section estimates is needed to fully implement the revised Annex Chapters to the Pacific Salmon Treaty.

The U.S. Section recommends that the Pacific Salmon Treaty line item in the Salmon Management Activities section of the NMFS budget be funded at $43,500,000 for fiscal year 2022. This line item includes $14,730,000 to provide base support for the States of Alaska, Washington, Oregon, and Idaho. NMFS activities to implement the Treaty's conservation and allocation provisions for Coho, Sockeye, Chinook, Chum, and Pink salmon fisheries is funded through overhead fees. Effective, science-based implementation of negotiated salmon fishing arrangements and abundance-based management approaches for Chinook, southern Coho, and Northern Boundary and Transboundary River salmon fisheries.

The U.S. Section recommends annual operational costs of $13,460,000 for hatchery conservation programs and habitat restoration for Puget Sound critical stocks, $3,910,000 for Southeast Alaska Chinook Salmon mitigation, and $5,540,000 to increase prey availability for Southern Resident Killer Whales. The recommended funding also includes $5,850,000 for sound science initiatives to fill key science gaps and improve fishery management effectiveness. The recommended funding also helps meet requirements of the biological opinion for species listed as endangered or threatened under the Endangered Species Act.

The U.S. Section recommends restoring the funding for the Chinook Salmon Agreement line item in Salmon Management Activities to $1,800,000. This funding supports research and stock assessments necessary to acquire and analyze the technical information needed to fully implement the abundance-based Chinook salmon management program provided for by the Treaty. The States of Alaska, Washington, Oregon, and Idaho, and the 25 Treaty Tribes conduct projects selected in a rigorous competitive process.

The International Fisheries Commissions line, under Regional Councils and Fisheries Commissions in the NMFS budget was funded at $457,000 in fiscal year 2021 and provides the U.S. contribution to bilateral cooperative salmon enhancement on the transboundary river systems, which originate in Canada and flow to the sea through Southeast Alaska. This project was established in 1988 to meet U.S. obligations specified in the Treaty and annual funding should continue at about $463,000 annually.

The core Treaty implementation projects included in the Pacific Salmon Treaty line, and the U.S. Chinook Agreement line under Salmon Management Activities, as well as the International Fisheries Commission line under Regional Councils and Fisheries Commissions consist of a wide range of stock assessment, fishery monitoring, and technical support activities for all five species of Pacific salmon in the fisheries and rivers between Cape Suckling in Alaska to Cape Falcon in Oregon. The States of Alaska, Washington, Oregon, Idaho, and the NMFS conduct a wide range of programs for salmon stock abundance assessment, escapement enumeration, stock distribution, and fishery catch and effort information. The information is used to establish fishing seasons, harvest levels, and accountability to the provisions of Treaty fishing regimes.

Prior to fiscal year 2020, the base annual Treaty implementation funding remained essentially flat since the inception of the Treaty in 1985. In order to continue to fulfill the Federal commitments created by the Treaty, as costs and complexity increased over time, the States had to augment Federal funding with other Federal and State resources. However, alternative sources of funding have seen reductions or, in some cases, have been eliminated. The increases of $20,000,000 for fiscal year 2020 and $5,000,000 for fiscal year 2021 to implement the revised Annex Chapters were a welcome change.

Negotiations to revise the provisions of the Annex Chapters to the Treaty, except for the Fraser River Chapter, were successfully completed in 2018. The revised provisions will last for 10 years. These chapters contain the specifics for implementing the Treaty for each species in each geographic area. The provisions for a revised Fraser River Chapter were completed in 2019. The revised chapters represent the combined efforts of the participants to ensure healthy salmon populations for the next 10 years. They also require commitments to increase efforts to improve upon current management strategies for numerous salmon populations.

Finally, you should consider the fact that the value of the commercial harvest of salmon subject to the Treaty and managed at productive levels under the Treaty, supports the infrastructure of many coastal and inland communities. The value of the commercial and recreational fisheries, and the economic diversity they provide for local communities throughout the Pacific Northwest and Alaska, is immense. The Pacific Salmon Commission recently funded an economic study of these fisheries and determined that this resource creates thousands of jobs and is a multi-billion dollar industry. The value of these fish to the 25 Treaty Tribes in Washington, Oregon, Idaho and Alaska goes far beyond their monetary value, to the cultural and religious lives of American Indian and Alaska Native peoples. A significant monetary investment is focused on salmon due to the listings of Pacific Northwest salmon populations under the Endangered Species Act.

Given these resources, the U.S. Section will continue to utilize the Pacific Salmon Commission process to develop recommendations that help with the development and implementation of solutions to minimizing impacts on listed stocks. We will continue to work towards the true intent of the Treaty, and with your support, we will manage this shared resource for mutual enhancements and benefits.

This concludes the statement of the U.S. Section of the Pacific Salmon Commission submitted for consideration by your Committee. We wish to thank the Committee for the support given to us in the past. Please let us know if we can supply additional information or respond to any questions the Committee Members may have.

Thank you.

[This statement was submitted by W. Ron Allen, Chair.]

PREPARED STATEMENT OF THE WESTERN GOVERNORS' ASSOCIATION

Chair Shaheen, Ranking Member Moran, and Members of the subcommittee, the Western Governors' Association (WGA) appreciates the opportunity to provide testimony on two items within the jurisdiction of the subcommittee on Commerce, Justice, Science, and Related Agencies, both of which relate to the U.S. Department of Commerce. WGA is an independent organization representing the Governors of the 22 westernmost States and territories. The Association is an instrument of the Governors for bipartisan policy development, information-sharing and collective action on issues of critical importance to the western United States.

Western Governors support adequate and dedicated funding for the National Integrated Drought Information System (NIDIS) program under the National Oceanic and Atmospheric Administration (NOAA). WGA is well-acquainted with the significant environmental, economic, and social effects of drought on the West and its communities. Drought contributes to the incidence of forest and rangeland wildfire, impairs ecosystems and wildlife habitat, degrades agricultural productivity, and poses threats to municipal and industrial water supplies. A growing population's dependence on limited water resources creates challenges for water management across the West, from the Great Plains to the Intermountain West to the coastal, estuarine and marine environments of the Pacific States and islands. Planning for an adequate, reliable and clean water supply requires accurate and complete water and weather information.

NIDIS promotes a coordinated and integrated approach to managing future drought. This approach involves improved forecasting and monitoring to provide the kind of authoritative, objective and timely drought information that farmers, water managers, decision-makers, and local governments require for effective drought

preparation and response. Through NIDIS, NOAA is building a network of early warning systems for drought while working with local resource managers to identify and address unique regional drought information needs.

Western Governors value the approach used to build and improve NIDIS. Rather than creating a new NIDIS bureaucracy, the system draws from existing capacity in States, universities and multiple Federal agencies, as called for in the original authorizing legislation. Given our shared fiscal challenges, WGA regards this as a model for Federal-State collaboration in shared information services.

Water users throughout the West—including farmers, ranchers, Tribes, land managers, business owners, recreationalists, wildlife managers, and decision-makers at all levels of government—must be able to assess the risks of drought before its onset to make informed decisions and implement effective mitigation measures. For these reasons, Western Governors request continued support and adequate funding for the National Weather Service River Forecast Centers and Weather Forecast Offices and the NIDIS program, which perform a valuable role in western water management and drought response.

Many western communities, especially Tribal communities, lack access to broadband internet due to the high cost of infrastructure and the economic realities of serving low customer densities in potential service areas. This has left many rural businesses at a competitive disadvantage and citizens without access to telework, telemedicine and distance learning opportunities. Consequently, Western Governors support opportunities to improve connectivity on rural and Tribal lands and efforts to leverage State expertise through State block grants. The Governors appreciate the increased funding allocated to Tribal and State projects within the National Telecommunications and Information Administration (NTIA) last fiscal year, including funding to mitigate the effects of COVID–19 and the new Tribal Broadband Connectivity Program. The Governors look forward to engaging with NTIA on this funding and stand ready to implement projects for the benefit of rural and Tribal communities,

Deployment of broadband infrastructure to these underserved and unserved communities requires an accurate picture of nationwide broadband availability. Western Governors applaud recent efforts to address the accuracy of broadband data coverage measurements through the Federal Communications Commission's (FCC) Broadband Data Task Force and the Broadband Deployment Accuracy and Technological Availability Act, known as the Broadband DATA Act, and support continued investment in these efforts. WGA also encourages coordination of data collection strategies among the Federal Communications Commission, U.S. Department of Agriculture and other agencies involved in broadband mapping and deployment.

Western Governors recognize the enormous challenge you have in balancing competing funding priorities, and we appreciate the difficulty of the decisions the subcommittee must make. These recommendations are offered in a spirit of cooperation and respect, and WGA is prepared to assist you as the subcommittee discharges its critical and challenging responsibilities.

[This statement was submitted by James D. Ogsbury, Executive Director.]

PREPARED STATEMENT OF THE WESTERN STATES WATER COUNCIL

NOAA/NWS U.S. WEATHER RESEARCH PROGRAM APPROPRIATIONS

On behalf of the Western States Water Council (WSWC), a government entity advising the governors of 18 States, we wish to express our strong support for a $15 million increase in the U.S. Weather Research Program line item within the National Oceanic and Atmospheric Administration's (NOAA) Fiscal Year 2022 appropriation for the National Weather Service (NWS), Office of Oceanic and Atmospheric Research (OAR) account.

The Weather Research and Forecasting Innovation Act of 2017 (Public Law 115–25), reauthorized in 2019 along with the National Integrated Drought Information System (NIDIS), directed NOAA to "collect and utilize information in order to make usable, reliable, and timely foundational forecasts of subseasonal and seasonal [S2S] temperature and precipitation." The statute further required submission of a report to Congress that described "specific plans and goals for the continued development of the subseasonal and seasonal forecasts" and "an identification of research, monitoring, observing, and forecasting requirements" needed to meet the statutory goals.

In 2020, the NWS submitted to Congress the report, *Subseasonal and Seasonal Forecasting Innovation: Plans for the Twenty-First Century*. The report outlines current uses of NOAA S2S products and services, and how NOAA plans to improve the usability and transference of data, information, and forecasts. Developed with input

from Federal, regional, State, Tribal, and local government agencies, research institutions, and the private sector, the report outlines innovations needed to achieve two goals for improving products and services: (1) improving the skill of foundational tools in order to improve the skill of the official S2S forecasts; and (2) enhancing the value of S2S products for stakeholders.

The report recommended a number of pilot projects, including one for improving forecasts of winter precipitation (which provides the snowpack sustaining water supplies in mountain areas) in the West, and one for spring/summer precipitation forecasts for agricultural water supply in the Plains States. Another was recommended for Artic sea ice and one for tropical cyclones.

The WSWC urges the subcommittee to provide resources to start the western pilot project to improve S2S precipitation forecasting to support water management. In fiscal year 2021 NOAA's Weather Research Program line item was budgeted at $26.5 million. The fiscal year 2022 President's budget request is $26.7M. A $15 million investment in S2S pilot projects would be on par with NOAA's successful Hurricane Forecast Improvement Project (HFIP).

Much of the West is currently experiencing unprecedented drought conditions. Currently, nearly all of our 18 member States are suffering from severe to exceptional drought, with half afflicted by the latter, the driest condition represented on the U.S. Drought Monitor scale (www.drought.gov). Agricultural interests are hit hardest as crops, feed, and forage deteriorate and rise in cost, threatening farmers, ranchers, and dairies. In some cases, producers are culling herds. Municipal water shortages are also possible, particularly for rural communities. Dry, hot, and windy weather combined with dried out vegetation has wildfires on the rise.

The scientific insights, data, and tools that the S2S pilot projects promise would help agricultural, rural, and urban water and land managers make better decisions. Better forecasts will provide private and public decisionmakers with longer lead times than are currently feasible to implement mitigation policies and programs. This would help to protect surface and ground-water supplies and provide greater certainty to farmers and ranchers who must make important crop, livestock, and conservation decisions now without reliable extended precipitation forecasts.

Current skill in S2S precipitation forecasting is not adequate to support water management decision-making, and a priority need to be placed on improving S2S forecasting capabilities. Water is the life-blood of the West, which experiences far greater variability in annual precipitation than does the eastern half of the country. Managing water in the West is about managing for the extremes of droughts and floods, and the need to store water when available to manage it during drier times for cities, farms, energy, and the environment. Better longer-term precipitation forecasts are a necessary tool for more efficient water resource management. Will this summer (or next winter) be wet or dry? This is a critical question asked every year by State, local, Federal, and Tribal water managers, as well as by cities, farmers, and hydroelectric powerplant operators.

Although the skill of conventional short-term weather forecasts (which go out as far as two weeks) has improved over the past several decades, the same cannot be said for the critical longer-term forecasts important for water management. These longer S2S forecasts span time periods of several weeks out to one or 2 years. The NWS's Climate Prediction Center (CPC) has minimal skill when producing available S2S forecasts.

As documented by NOAA's National Centers for Environmental Information, disasters at both wet and dry extremes of the hydrologic cycle are responsible for billions of dollars in losses. With better S2S forecasts, water managers can better prepare for and respond to drought and flooding, reducing loss of lives and property, as well as economic and environmental losses. Similarly, decision makers in agriculture, fisheries, hydroelectric power generation, and emergency management sectors share a common interest in more skillful and useful forecasts.

Lead time is critical in making water management decisions. Longer lead times are especially useful in planning and managing for the extremes of droughts and floods. Skillful S2S forecasts would inform and allow for more efficient operation of dams and reservoirs, balancing competing objectives of flood control and water storage. Absent good predictive capability, weeks ahead, reservoir operators must manage risk as conservatively as possible to ensure that space will be available to hold winter-spring runoff and manage floods. Better forecasts would allow operators to store more water for use during drought, while still providing flood protection—the equivalent of developing new water supplies at minimal cost. There are opportunities for improving S2S forecasting, but historically there has been a S2S research investment gap between conventional numerical weather modeling and century-scale climate modeling. Significant scientific progress has been achieved at the

weather and century-scale ends of this spectrum, thanks to ongoing Federal investments, but much remains to be done at the S2S scale.

According to the American Meteorological Society, the skill of 5- to 6-day NWS temperature forecasts in 2012 is equivalent to that of 3- to 4-day forecasts in 1992. Also, substantial Federal support from 1990 onwards for the U.S. Global Change Research Program resulted in major progress in developing increasingly complex climate models. However, similar progress and investment have not occurred at the S2S time scale so important for western water management. Improving S2S precipitation forecasting is a scientifically challenging subject that will require a commitment of dedicated, sustained funding. There is no silver bullet for S2S forecasting improvement, but the necessary ingredients for making progress include investment in all aspects of the subject (human resources, high-performance computing, observing systems, and transition of research innovations to operations). Well-defined metrics and timelines for evaluating success, with a strong project management focused on outcomes, are needed.

Regional pilot projects in areas where NOAA's current predictive skill is minimal are key to accelerating advancement of forecasting skill. Pilots provide opportunities to test tools such as statistical models or hybrid statistical-dynamical tools that can enhance information provided by NOAA's dynamical models.

The international Colorado River Basin has experienced prolonged drought conditions, for over 20 years, resulting in declining reservoir elevations in Lake Mead and Lake Powell. Water agencies in the seven Colorado River Basin States have been taking unprecedented steps to manage the risk of shortage, including executing historic drought contingency plans with the Department of the Interior in 2019. Drought risk management programs in the contingency plans cost money and/or water. Skillful seasonal precipitation forecasts would help support decisions to balance costs against risks of shortage.

In 2015 NOAA released its first-ever service assessment for drought, for the California drought which had then completed its third year. NOAA assessments evaluate its performance after significant hydrometeorological, oceanographic, or geologic events. The assessments are triggered by factors such as major economic impacts to a large area or population, or extensive national public interest impacts. Assessments evaluate the effectiveness of products and services made available to stakeholders, to help NOAA continuously improve the services it provides. The drought assessment's top finding given the input received from numerous stakeholders emphasized the need for an improved seasonal prediction capability focused on cool-season mountain precipitation, both in California and in the Colorado River Basin. "A majority of the stakeholders interviewed for this assessment noted one of the best services NOAA could provide is improved seasonal predictions with increased confidence and better interpretation."

NOAA's CPC seasonal precipitation products are national in scale and are not designed to provide regional forecast information—information which is most relevant to decision makers. For instance, State and Federal officials managing California's water supply have a major unmet need for skillful predictions targeted at cool-season snowpack for the Sierra Nevada Mountains.

Improving the skill of S2S precipitation forecasting to make it usable for water resources management is scientifically challenging. In 2016, the National Academy of Sciences released a report on a national research agenda for improving S2S forecasting. The report provided a vision for S2S forecasts that could be as widely used in the next decade as conventional weather forecasts are today. It identified key strategies and made 16 specific recommendations for a research agenda. It noted, "More skillful and useful S2S forecasts—developed through sustained engagement with users and advances in basic knowledge and technological capabilities—could radically improve the basis for decision making on S2S timescales. There are also emerging science and technical capabilities that make rapid advances in S2S forecasts more likely than envisioned even 5 years ago."

Preliminary experimental work being performed by NOAA's Earth Systems Research Laboratory (ESRL) under a contract with the California Department of Water Resources developed a preliminary statistical model for S2S precipitation using sea surface temperatures and sea level pressure. This work demonstrates a potential opportunity for improving S2S forecasting precipitation through NOAA investment in statistical modeling.

NOAA outlooks now rely heavily on the El Nino-Southern Oscillation (ENSO) as a source of predictability. NOAA's early winter forecast in 2014 called for a weak to moderate El Nino with above-normal precipitation for California. ENSO conditions were neutral and California had one of its driest years on record. In 2015, NOAA correctly predicted the onset of very strong El Niño conditions, but the expectation of a wet Southern California and dry Pacific Northwest was met with contin-

ued drought in Southern California and flooding in the Pacific Northwest, illustrating how much work remains to be done to improve seasonal forecasting.

NOAA's National Centers for Environmental Information (NCEI) tracks U.S. Billion-Dollar Weather and Climate Disasters (https://www.ncdc.noaa.gov/billions). The 2012 drought was the most extensive drought to affect the U.S. since the 1930s, with moderate to extreme drought conditions affecting more than half the country. Estimated losses totaled $34.8 billion. Drought in the West and Plains States in 2013 caused an estimated $11.7 billion in losses. In 2014 California suffered its worst drought of record, and together with other States, losses were estimated at $4.4 billion. The western drought of 2015 cost $5 billion and in 2016 a Southeast and Northeast drought cost $3.8 billion. Similarly, drought costs across the Nation have been estimated at $2.7 billion in 2017, $3.1 billion in 2018, and $4.5 billion in 2020. These numbers don't include related wildfire losses, or losses due to floods. This year the West is experiencing another drought, the costs of which will be significant.

Better S2S forecasts would help inform decision-making and help mitigate such losses. This $15 million request for a pilot project to accelerate research and improve S2S predictive capabilities is a small investment, compared to the potential savings nationwide.

PREPARED STATEMENT OF THE WESTERN STATES WATER COUNCIL

NASA'S APPLIED EARTH SCIENCE RESEARCH PROGRAMS

The Western States Water Council (WSWC) is a policy advisory body representing 18 States. Members are appointed by their respective governors. Since 1965, the WSWC has long been involved in western water conservation, development, protection, and management issues, as well as promoting development and advancement of earth science, particularly water-related data acquisition, management and dissemination.

The WSWC championed the placement of a thermal infrared (TIR) imager on Landsat 8 and the expedited construction and launch of Landsat 9 with TIR capabilities. We strongly support innovation to provide similar next generation National Land Imaging Program data—including thermal imaging capabilities—while exploring the potential for medium and longer-term advances in technology, design and future capabilities to meet existing and future uses. Landsat TIR data is used extensively by western States and others to measure and monitor agricultural and other outdoor water uses and needs. It is increasingly important for present and future management of our scarce water resources and is an excellent example of the application of basic science pioneered by the National Aeronautics and Space Administration (NASA).

In the West, the agricultural and water communities have benefited tremendously from the use of moderate resolution thermal satellite data to map out, measure and monitor consumptive water use. Agriculture is by far the largest consumer of water in the West, and better managing that use is an essential component of both water and food security, as well as sustainable economic development and environmental protection. Increasing demands for water related to growth and changing values are leading to more and more transfers of water from agriculture to other uses, with resulting challenges in maintaining viable rural agricultural communities. Many western States are using Landsat thermal data to protect water rights and manage water use.

NASA has identified the "water and energy cycle" and "water resources" as topics to support in the agency's research and applications programs respectively. The Council strongly supports and works cooperatively to advance linkages between NASA's capabilities and water managers' needs, working with NASA/JPL's Western Water Applications Office (WWAO). WWAO's mission is to "connect the drops" and improve how water is managed in the arid western U.S. by getting NASA science, data and technology into the hands of water managers and decision makers. Connection, data and innovation are at the heart of WWAO.

The Council urges the Congress to appropriate sufficient funds to support and enhance WWAO's and NASA's focus on research for water resources applications, as well as to promote long-term engagement with State and regional agencies in the western United States responsible for water management and water policy—so as to maximize benefits to the public from NASA's existing and future investments in Earth observations, Earth system models and systems engineering.

The WSWC also calls on the Congress to plan for and provide resources for long-term continuity of observations and the transition from research to operations

(R2O), such as the use of Landsat TIR sensor data. The Open Evapotranspiration (OpenET) software system and data platform is another example of the use of NASA TIRs data through an operational use partnership (https://openetdata.org/). OpenET is a collaboration involving scientists from Federal agencies and academic institutions using satellite and weather data to map consumptive water use/evapotranspiration (ET) at the individual field scale. Interferometric synthetic aperture radar (InSAR) is another tool that NASA has used to measure land subsidence due to groundwater extraction, and its use has been demonstrated as part of NASA's Airborne Snow Observatory (ASO) for estimating snowpack conditions. Additional airborne and spaceborne remote sensing research and observations have the potential to provide information on varied temporal and spatial scales that could with sustained engagement focus on the R2O transition and ultimately be useful for water resources planning, management and decision-making.

NASA's work with the California Department of Water Resources on applications for use of remote sensing information has demonstrated that the potential exists for repurposing data collected from certain present NASA missions for water management applications, and that additional potential exists for research applications with sensors planned in future Decadal Survey missions such as the NASA–ISRO Synthetic Aperture Radar (NISAR), which is designed to observe and take measurements of the planet's crust and disturbances, including subsidence due to groundwater pumping. The successful transfer of technology from the research domain to the applications domain is dependent, in part, on continuing communication between researchers and those responsible for resource management and policy decisions and a long-term commitment to maintaining such communication.

Much of the West is currently experiencing unprecedented drought conditions. Currently, nearly all of our 18 member States are suffering from severe to exceptional drought, with half afflicted by the latter, the driest condition represented on the U.S. Drought Monitor scale (www.drought.gov). Agricultural interests are hit hardest as crops, feed, and forage deteriorate and rise in cost, threatening farmers, ranchers, and dairies. In some cases, producers are culling herds. Municipal water shortages are also possible, particularly for rural communities. Dry, hot, and windy weather combined with dried out vegetation has wildfires on the rise. Western States are using NASA tools to monitor drought-related impacts and consumptive water uses and needs.

Thank you for the opportunity to express our support for various NASA programs and missions the application of which support western water management.

PREPARED STATEMENT OF THE WILDLIFE CONSERVATION SOCIETY

FUNDING FOR THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

The Wildlife Conservation Society (WCS) would like to thank Chair Shaheen, Ranking Member Moran, and the Members of the subcommittee for providing this opportunity to submit testimony in support of funding in the fiscal year 2022 Commerce, Justice, Science and Related Agencies Appropriations Act for the National Oceanic and Atmospheric Administration's (NOAA) National Marine Sanctuaries Program, the National Marine Fisheries Service Office of Protected Resources funding for the critically endangered North Atlantic right whale and for Regional Ocean Data Portals within the Coastal Zone Management Grants and Services funding line.

WCS was founded with the help of Theodore Roosevelt in 1895 with the mission of saving wildlife and wild places worldwide. Today, WCS manages the largest network of urban wildlife parks in the United States. Visited by 4 million people annually, the network includes our flagship, the Bronx Zoo, as well as the New York Aquarium in Brooklyn. Globally, our goal is to conserve the world's most important wild places, focusing on 14 priority regions that are home to more than 50 percent of the world's biodiversity. We have offices and field programs in more than 60 countries and with our partners manage more than 200 million acres of protected areas around the world, employing more than 4,000 staff including about 200 Ph.D. scientists and 100 veterinarians. Working in all the world's oceans, WCS combines its expertise in the field, aquarium and zoos to achieve its conservation mission both in New York and around the world. In our view, the largest threats facing marine wildlife and habitats require innovative, science-based solutions that balance conservation and sustainable use of the ocean.

The future of our ocean and coastal resources—and our National well-being—depends on a strong NOAA. For these reasons, we support robust investment in the Federal Government's premier ocean science, conservation and management agency.

We ask that the subcommittee Members use this additional investment in NOAA in the fiscal year 2022 Commerce, Justice, Science and Related Agencies appropriations bill to increase investments in the National Marine Sanctuaries Program, North Atlantic right whale conservation and regional ocean data portals.

NOAA—National Marine Sanctuaries Program—$84.503 Million: The National Marine Sanctuary System is our essential network of protected waters held in trust for all Americans. Marine sanctuaries and monuments are home to millions of species, preserve our Nation's maritime heritage, and promote access for exploration and world-class outdoor recreation. The conservation and sustainable use of marine ecosystems and biodiversity are vital to maintaining a healthy ocean and Great Lakes, addressing the climate crisis, and underpinning productive coastal economies.

The United States is an ocean nation containing 3.4 million square nautical miles of ocean-larger than the combined land area of all 50 States. The National Marine Sanctuary Program serves as trustee for 14 ecologically and culturally significant ocean and Great Lakes sites. The system works with diverse partners and stakeholders to promote responsible, sustainable ocean uses that ensure the health of our most valued ocean places. A healthy ocean is the basis for thriving recreation, tourism and commercial activities that drive coastal economies. The Office of National Marine Sanctuaries also leads the National Marine Protected Areas Center, the Nation's hub for building innovative partnerships and tools to protect our special ocean.

WCS strongly supports the Biden-Harris Administration's commitment to 30x30 goals—conserving at least 30 percent of the world's lands and oceans by 2030 (30x30). U.S. implementation of 30x30 provides a critical foundation for global success on biodiversity conservation, mitigating and adapting to climate change through natural climate solutions, and preventing zoonotic spillover that causes pandemics such as COVID–19. It provides an opportunity for improved inter-agency coordination, as well as alignment, and synergy among existing and new laws, regulations, and mechanisms to enhance habitat protection. 30x30 can also provide a pathway to reconciliation of the issues of equity and justice that underlie conservation in this country by honoring and elevating the role of Indigenous Nations in any 30x30 strategy.

Although there are places that merit all protections that U.S. law can provide, working lands and busy waters also play a critical role in meeting the Nation's 30x30 goals. As such, the National Marine Sanctuaries Program which balances conservation and sustainable use must be an integral part of the U.S. response. The program needs additional resources to support existing Sanctuaries as well as to initiate the public-facing, stakeholder-driven process to designate new Sanctuaries in areas that NOAA has determined are worthy of designation. While there is no Sanctuary in the New York Bight, WCS nominated Hudson Canyon as a National Marine Sanctuary in 2016. Located just 100 miles from the Statue of Liberty, NOAA determined it is a site of ecological and economic importance and placed the nomination in its inventory of successful nominations. WCS's nomination recommended a Hudson Sanctuary designation would supplement and complement existing regulations by ensuring that oil, gas and mineral exploration and extraction be permanently precluded from a Hudson Sanctuary and that the existing authorities (e.g. Mid-Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission and NOAA's Highly Migratory Species Division) continue to regulate fisheries when a Sanctuary is designated. With increased resources from Congress, WCS looks forward to NOAA initiating the public-facing, stakeholder driven designation process for Hudson Canyon.

For these reasons, WCS supports the Biden-Harris Administration's recommended investment of $85.503m for the fiscal year 2022 Sanctuaries and Marine Protected Areas ORF as detailed in the President's Budget Request and Congressional Justification.

NOAA—Office of Protected Species, funding for North Atlantic Right Whale conservation within Marine Mammals, Sea Turtles, and Others Species, $20 Million: NOAA's Office of Protected Species is responsible for the conservation, protection and recovery of more than 150 endangered and threatened marine species under the Endangered Species, including the North Atlantic right whale. The Office is also responsible for the management and protection of all whales, dolphins, porpoises, seals, and sea lions under the Marine Mammal Protection Act.

Fewer than 360 North Atlantic right whales remain on Earth, with as few as 90 breeding-aged females. While the 17 newborn calves sighted this winter offer an emblem of hope, right whale deaths still outnumber births by a margin of three to two. We are facing an emergency situation: this species cannot recover without a signifi-

cant reduction to the high level of mortality they are currently experiencing, including from ship strikes in high trafficked areas such as New York and New Jersey waters. Scientists from the Wildlife Conservation Society, in collaboration with partners that include the Woods Hole Oceanographic Institution, monitor right whales and other marine mammals as they migrate through New York's busy waters. The New York Bight is used for shipping, fishing, and wind farm development, yet the impacts of these activities on whales is poorly understood. Eight million dollars out of $20 million is needed to increase investments in research, monitoring and management related to vessel strikes and fishing gear entanglements by NOAA. With this funding, managers, stakeholders and the public will be able to contribute to the conservation of the critically endangered North Atlantic right whale.

NOAA—Coastal Zone Management Grants and Services, Regional Data Portals, $10 Million: The ocean is increasingly crowded and conflicts arising from current and emerging offshore ocean uses present unique management challenges. These challenges must be addressed regionally, including collaboration between regions, and holistically with States, Tribes, fishery management councils, Federal agencies, and other ocean users across all sectors, including industry and conservation partners. Regional Ocean Partnerships (ROPs), convened by coastal State governors, are already structured to maximize interagency collaboration on cross-jurisdictional ocean and coastal matters and many have been efficient models for convening all ocean users.

Ocean data portals developed by ROPs are designed to maximize interagency collaboration on cross-jurisdictional ocean and coastal matters while also providing an important tool for stakeholder engagement and public education. Both ROPs and the publicly accessible ocean data portals they manage serve a key coordinating function, working to enhance a common understanding among stakeholders and agencies about ocean resources and their use. This leads to improved management decisions that help cut costs, benefit our business ventures, boost our scientific understanding, and conserve ocean ecosystems. WCS relies on the Mid-Atlantic Regional Council on the Ocean (MARCO) data portal to inform our conservation work. We also use this unique tool to inspire and educate teachers and students about marine conservation.

WCS appreciates the opportunity to share its perspective and to make a case for increases in Federal investments in conservation in the fiscal year 2022 Commerce, Justice, Science and Related Agencies Appropriations Act. As an ocean nation, Americans depend on Federal investment in NOAA programs that are rooted in marine science and stakeholder engagement. These investments will help us balance marine conservation and sustainable use of the ocean.

Thank you for the opportunity to provide details on these WCS requests to the Commerce, Justice, Science and Related Agencies Appropriations subcommittee in preparation for the fiscal year 2022 Appropriations Act. WCS marine science and policy experts are available to the subcommittee should there be any follow up questions.

Contact: Noah Chesnin, Associate Director, New York Seascape Program, nchesnin@wcs.org

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