

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2020

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 ASTRONOMICAL SOCIETY

NASA AND THE NATIONAL SCIENCE FOUNDATION

On behalf of the over 7,000 members of the American Astronomical Society (AAS), thank you for the opportunity to submit outside witness testimony regarding our funding priorities for NASA and the National Science Foundation (NSF) in fiscal year 2020.

Before I get to fiscal year 2020, I would like to express our sincere thanks for your subcommittee's incredibly strong support of the astronomical sciences in previous years. Our community of students, scientists, engineers, and educators recognizes and appreciates your steadfast support for key programs at NASA and the NSF enabling worldclass research in astronomy, planetary science, and heliophysics. These wise investments opened a completely new way of seeing the universe, through gravitational waves. They made possible dramatic discoveries, ranging from the composition of the surface of Mars to the formation of distant planets circling other stars, to the siren call of two black holes spiraling together to become one.

Regarding fiscal year 2020, we understand there are many competing priorities and budgetary pressures, so we are advocating elsewhere for both a new bipartisan agreement raising the non-defense discretionary budget caps and strong 302(b) allocations for your subcommittee. Assuming that another budget deal is reached, the AAS asks that your fiscal year 2020 subcommittee bill include at least \$9.0 billion for NSF and at least \$22.6 billion for NASA. I have included a more detailed summary table at the end of this testimony.

As you may know, our community sets its ranked priorities for new investment via a consensus-based "decadal survey" process, commissioned by the agencies and carried out independently by the National Academy of Sciences. AAS advocates for a balanced Federal astronomical sciences portfolio that follows the guidance of the decadal surveys, associated midterm reports, and other scientific community inputs like senior, portfolio, and standing advisory committee reviews. These guiding inputs paired with strong support from Congress have allowed the U.S. to be the clear world leader in space science research since the U.S. astronomy community pioneered the decadal survey mechanism in the 1960s.

NATIONAL SCIENCE FOUNDATION (NSF)

The AAS joins the other 100+ organizations of the Coalition for National Science Funding (CNSF) to urge you to prioritize the NSF for what we recognize is an ambitious increase by providing a \$9.0 billion (+11 percent) investment in fiscal year 2020. The demand is real and far exceeds this requested ~\$1 billion increase. The NSF must deny the equivalent of billions of dollars of support to excellent-rated, research and education grant proposals every year. The most recent NSF-wide solici-

tation of interest in mid-sized instrumentation identified \$3 billion in high impact projects in the \$20–70 million range. Our national research and development enterprise depends on a strong NSF that is empowered to support bold, transformative science and prepare a highly-skilled and diverse technical workforce. The U.S. should rise to meet the challenge of an era of both immense scientific and technical potential and unprecedented global competition.

In the space sciences, NSF plays a key complementary role to NASA. NSF’s Division of Astronomical Sciences (AST), in the Mathematical and Physical Sciences Directorate (MPS), is the Federal steward of ground-based astronomy in the U.S., and the Division of Atmospheric and Geospace Science (AGS) in the Geosciences Directorate (GEO), supports complementary studies of our Sun and its interaction with Earth. GEO pioneered the innovative Cubesat program that supports training of students and support for researchers at many smaller institutions across the Nation. Ever-increasing grant pressure and growing costs of building and operating the cutting-edge facilities befitting a global leader persist in both divisions. We risk missing potential paradigm-shifting scientific investigations from the widest possible research community and settling for diminished returns on U.S. taxpayer investment in both existing and future facilities.

The Astronomy and Geospace Portfolio Reviews acknowledged the important science made possible by existing facilities such as the Arecibo Observatory in Puerto Rico and the Green Bank Observatory in West Virginia, but the reviews still recommended divestment of these facilities because it was overly constrained by pessimistic budget forecasts. With exception of a welcome infusion of one-time funds in fiscal year 2018 (including Hurricane Maria emergency supplemental funds), the overall budget situation for NSF astronomy was, and remains, so dire as to risk future U.S. scientific leadership in ground-based astronomy. In tandem, the significant reductions in publicly-funded telescope time and data analysis deepens the divide within the astronomical community between the “haves” at elite institutions and the “have-nots,” reducing broad, diverse access to the study of the universe.

The Daniel K. Inouye Solar Telescope and Large Synoptic Survey Telescope, soon to be completed, require operational support that, as currently planned, will be carved out of the competed research grant programs. Right now, the National Academies’ Astronomy and Astrophysics Decadal Survey (Astro2020) is considering what the next generation of world-leading observatories should look like. These proposed world-leading observatories cannot be built, let alone operated, with the current NSF budget and approach to building and operating large facilities. The dramatic—not incremental—leap in capability and scientific understanding represented by these new machines, together with a generation of scientists and engineers and their technological achievements, stand to be lost without an ambitious recommitment to NSF.

NSF is strongest when its research programs and education programs—housed within both the Research and Related Activities (R&RA) and Education and Human Resources (EHR) accounts—are strong and able to engage a STEM workforce across diverse sectors and career stages. NSF education programs provide opportunities for both students and educators in a dedicated way that no other science agency does.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

At NASA, as in previous years, the AAS requests support for a balanced, world-leading scientific program guided by the decadal surveys, consistent with past congressional appropriations and authorizations. While we do not specify a number for NASA’s STEM Engagement office, we are totally opposed to the administration’s proposal to eliminate these important programs.

The divisions of NASA’s Science Mission Directorate (SMD) engage in discovery research across size and distance scales, from using local laboratory measurements here on Earth to interpret information carried by photons and particles, to collecting those photons and particles with space-based telescopes and detectors on robotic vehicles. Scientific exploration of space can lay the intellectual and technical groundwork for the human exploration of space; the expansion of human knowledge of phenomena in space and the search for life’s origin, evolution, distribution, and future in the universe are statutory objectives for NASA.

Astrophysics Division: We ask that you reject the administration’s proposed 30 percent budget reduction that would devastate our Nation’s efforts to understand how the universe works, how we got here, and whether we are alone. We request that your subcommittee continue to support a strong astrophysics portfolio that grows by a steady 5 percent per year. An additional appropriation of \$134 million would also enable continued development of the next decade’s Wide Field Infrared Survey Telescope, WFIRST (\$446 million; +43 percent), which is building on the sci-

entific legacy of the Hubble Space Telescope and learning from the hard development and budgeting challenges of the James Webb Space Telescope. New small and medium explorers will advance through their early development stages in fiscal year 2020, and the 2019 Astrophysics Senior Review and two SOFIA reviews will ensure efficient use and maximum scientific return from the fleet of existing astrophysics assets in fiscal year 2020 and a strong appropriation. The total Astrophysics Division request—including the planned increase for WFIRST development on top of a 5 percent increase for the rest of the program to ensure balance—is \$1.37 billion (+15 percent).

Heliophysics Division: Consistent with past support from your subcommittees, we ask that you provide continued robust funding in support of the top-priority Heliophysics DRIVE initiative, to provide critical support for early career scientists and for the development of new technologies in anticipation of an increased cadence for Explorer missions. Also, consistent with the provisions of the Senate’s space weather program, invest in space weather observations and forecasting that advance research-to-operations and operations-to-research efforts.

Planetary Science Division: Thanks to Congress’ strong commitment to exploring the worlds of our Solar System, fiscal year 2020 is poised to include the launch of the first stage of Mars Sample Return, the Mars2020 Rover, and also reveal the rich scientific return of recent planetary encounters—like New Horizons’ flyby of MU69, OSIRIS-REx’s study of the asteroid Bennu, and InSight’s examination of the Martian interior. Now is not the time to undermine that progress, but rather embolden it with steady growth in concert with the other scientific divisions.

We request that funding for Planetary Science programs and missions beyond the recommendations of the decadal survey continues—as Congress did in fiscal year 2019—to be added above and beyond full support of the rest of the work of the division (i.e., above and beyond our request here) only if and when they are prioritized as part of a balanced program in a future decadal survey. This list includes the Lunar Exploration, Planetary Defense, and Europa Lander (recommended by the Planetary midterm assessment to be reprioritized in the next decadal).

JWST: The AAS community appreciates and welcomes rigorous Congressional oversight over the JWST project. We share Congress’ “profound disappointment,” as expressed in the fiscal year 2019 final appropriations committee report, and we too lament the opportunity cost to other NASA activities. We nevertheless hold not only that the science of JWST will be worth the wait and cost when it starts operating after its March 2021 launch, but also that NASA has our confidence for mission success, given the findings and responses to the recent Independent Review Board (IRB).

Space Technology Mission Directorate (STMD): Finally, we are concerned about the policy and accounting implications of the administration’s Moon-Mars initiative for the critical role that the STMD plays in projects across all the science divisions. Of immediate concern is the apparent disappearance of STMD’s significant promised contribution to the coronagraph development for the WFIRST mission.

SUMMARY TABLE

Agency/Program (\$B)	2019 Enacted	2020 Pres Bud	2020 AAS Ask	Ask—2019 (\$)	Ask—2019 (%)
NSF	8.08	7.07	9.00	+0.92	+11
EPSCoR	0.18	0.15	0.20	+0.02	+11
NASA	21.50	21.02	22.58	+1.08	+5
Science	6.91	6.30	7.50	+0.59	+8
Astrophysics	1.19	0.84	1.37	+0.18	+15
JWST	0.30	0.35	0.35	+0.05	+17
Planetary	2.76	2.62	2.90	+0.14	+5
Heliophysics	0.72	0.70	0.76	+0.04	+5
Space Technology	0.93	1.01	0.97	+0.04	+6

[This statement was submitted by Dr. Megan Donahue, President.]

PREPARED STATEMENT OF THE AMERICAN BAR ASSOCIATION

LEGAL SERVICES CORPORATION

Request: Chairman Moran, Ranking Member Shaheen, and Subcommittee Members, I am Bob Carlson, President of the American Bar Association (ABA) and a

shareholder with the Butte, Montana, law firm of Corette Black Carlson & Mickelson, P.C. I submit this statement today on behalf of approximately 400,000 members of the ABA. The ABA has long been committed to “Equal Justice Under Law” in our country, establishing our Standing Committee on Legal Aid and Indigent Defendants in 1920. U.S. Supreme Court Justice Lewis F. Powell, while serving as ABA President in 1964, understood the need for equal justice and became a key, early supporter of Federal legal aid before President Nixon signed the Legal Services Corporation (LSC) Act into law in 1974. The LSC has requested \$593 million for fiscal year 2020 funding and the ABA fully supports that request. LSC intends to allocate this increased funding amount entirely to basic field grants so that LSC’s grantees can assist with 55 percent more civil legal problems than they currently serve.

2017 Justice Gap Study: The basis for the \$593 million request is the 2017 Justice Gap Report. If approved, this requested budget would put the LSC on a better trajectory to achieve the pledge of justice for all.

In June 2017, the University of Chicago’s NORC provided analysis regarding the unmet civil legal needs of indigent Americans. The survey of more than 2,000 adults living in low-income households (at or below 125 percent of the Federal Poverty Level) updated two previous reports. The report states, “Eighty-six percent of the civil legal problems faced by low-income Americans in a given year receive inadequate or no legal help.” Specifically, LSC Board Chair John G. Levi pointed out: “Low-income seniors, for example, received inadequate or no professional help for 87 percent of their civil legal problems. For low-income rural residents, the number was 86 percent, while for low-income veterans or other military personnel, the number was 88 percent.”

Disaster Funding Request: The ABA also supports LSC’s supplemental disaster appropriations requests. The \$15 million provided in H.R. 268 is much appreciated. LSC has now requested additional funding of \$500,000 above the \$15 million appropriation due to subsequent disasters. We hope the committee will keep a close eye on 2019 disasters and will provide needed supplemental funds for LSC disaster legal services again this year.

Additionally, we appreciate the subcommittee’s removal of funding restrictions for the disaster money. This removal will enable more direct, immediate aid to those suffering from disasters.

LSC Disaster Task Force: On March 13, 2018, at a Capitol Hill briefing, LSC Board Chair John Levi announced a Disaster Task Force comprising LSC grantees, business leaders, emergency management experts and other stakeholders to take a more comprehensive approach to its disaster work to increase its impact nationwide. The task force aims to provide a report with recommendations, a grantee’s guide for continuity of operations planning (COOP), and a toolkit for grantees that builds on the disaster preparedness and response work of LSC’s Midwest Legal Disaster Coordination Project. The toolkit will include: (1) templates for education materials about civil legal aid assisting disaster survivors; (2) training materials specifically for volunteer attorneys that cover the most common legal issues faced by disaster survivors; (3) instructions for creating a disaster relief and response hotline and on-line application; (4) access to preparedness go-kit checklists for the user to fill out ahead of a disaster; and (5) a guide for developing mobile-optimized disaster websites.

Stafford Act & FEMA’s National Response Framework: The Federal Government is integrally involved in Presidentially-declared disasters and has a crucial role in Federal justice for all—which should not be passed on to the States, Tribes, and localities as an unfunded mandate.

When the President declares a national disaster, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5143(b), Public Law 93–288, as amended (Stafford Act), creates the mandate to “assist local citizens and public officials in promptly obtaining assistance to which they are entitled.” Furthermore, the Stafford Act, 42 U.S.C. § 5143(b) states:

Whenever the President determines that low-income individuals are unable to secure legal services adequate to meet their needs as a consequence of a major disaster, consistent with the goals of the programs authorized by this Act, the President shall ensure that such programs are conducted with the advice and assistance of appropriate Federal agencies and State and local bar associations.

The Federal Emergency Management Agency (FEMA) organizes disaster response and recovery efforts through the National Response Framework (NRF). The NRF is a guide that describes specific authorities and best practices for managing incidents and outlines several coordinating structures—the most pertinent to legal aid pro-

viders are the Emergency Support Functions (ESFs). The Federal ESFs are the primary Federal coordinating structures for building, sustaining, and delivering the response core capabilities. There are 15 ESFs in total.

Pages 2, 8, 11, and 18 of ESF #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services (https://www.fema.gov/media-library-data/1470149820826-7bcf80b5dbabe158953058a6b5108e98/ESF_6_MassCare_20160705_508.pdf) direct the provision of civil legal services.

ABA & LSC in the National Response Framework: ESF #6 indicates on page 18 that this Federal mandate to provide disaster legal services is carried out through the ABA's Young Lawyers Division (YLD):

American Bar Association (ABA) Through the ABA's Young Lawyers Program, provides free disaster legal services for low-income individuals who, before or because of the disaster, are unable to secure legal services adequate to meet their disaster-related needs.

To this end, FEMA and the ABA originally executed a memorandum of agreement (MOA) in December 1972 and renewed it in 2007. The YLD's Disaster Legal Services (DLS) Program fulfills this MOA during disasters. The DLS Program coordinates the pro-bono legal efforts of multiple State and local bar associations when activated by FEMA following a natural disaster. LSC grantees working in the impacted disaster area typically manage these efforts.

LSC maintains regular communication with the American Red Cross and FEMA to coordinate a response, convening regular national Legal Aid Disaster Network calls, and sponsoring the National Disaster Legal Aid website, www.disasterlegalaid.org. LSC grantees thus provide critical resources to manage disaster response efforts effectively and efficiently in accordance with the terms of the FEMA/ABA YLD agreement and the Stafford Act's Federal mandate. Funding for this Federal mandate cannot be passed onto States, Tribes, and localities.

Disaster Legal Work: Disasters have a severe and disproportionate impact on the poor, resulting in a sharp increase in the need for legal help. The ABA statistic on disaster declarations in each state can be found on the infographics on the ABA website at https://www.americanbar.org/content/dam/aba/uncategorized/GAO/LSC%20Infographic_Senate-1.pdf. LSC describes the disaster work of their grantees in these districts as follows:

In the immediate wake of a disaster or crisis, disaster-related legal issues follow a common pattern. Survivors often need help obtaining copies of important documents such as birth certificates, driver's licenses, and Social Security cards to apply for or restore benefits and supports. The need for adequate housing is generally a major issue for survivors of most disasters. In addition, low-income and other vulnerable people who need housing after an emergency are more susceptible to scams and price gouging. With families experiencing even more stressors than before, there is also an increase in the need for more legal information on core areas of practice for legal aid, such as public benefits, domestic violence prevention, consumer law, and fraud prevention.

Opioids: In addition to LSC's new Disaster Task Force, on April 10, 2018, at LSC's quarterly board of directors meeting, LSC Chair John Levi announced a new LSC Opioid Task Force, co-chaired by LSC Board Members Victor Maddox and former ABA President Robert Grey, and comprising LSC leaders, grantees, healthcare and social services experts, and stakeholders.

The task force addresses and educates the public about the legal issues raised by the opioid crisis in areas such as healthcare, family law, domestic violence, child and elder abuse, and housing.

In Harrison County, West Virginia, for example, an advocate reports that she primarily sees grandparents raising grandchildren, who are often informally placed in their care due to neglect by the addicted parents. "Grandparents aren't really aware of the kinds of benefits that can come from establishing formal legal custody in court," Courtney Crowder told the Exponent Telegram. "Medical treatment and school enrollment are two barriers that come with not having legal custody of a child. As well, grandparents can receive benefits through the Department of Health and Human Resources. That can be really helpful for grandparents, especially those who are living on a fixed income and probably didn't plan on raising three extra kids," Crowder said.

The ABA developed a statistic on opioid deaths in each state that can be found on the infographics on the ABA website at https://www.americanbar.org/content/dam/aba/uncategorized/GAO/LSC%20Infographic_Senate-1.pdf. With the opioid crisis placing heavy new burdens on legal aid, a funding increase is critical.

Additional Considerations: Beyond Federal responsibilities regarding the costs that natural disasters and the opioid crisis impose upon LSC grantees, four other points should be considered for LSC funding: (1) The cuts in LSC funding vis-à-vis historic levels; (2) The demonstrated cost-benefit value of legal aid; (3) The role of legal aid referrals from Federal constituent services representatives; and (4) The popularity of legal aid in America.

1. *Funding for LSC is Down 43 Percent Since the 1980s:* I want to thank this subcommittee for the partial restoration of funding for LSC in fiscal year 2019. That money will permit LSC to serve more needy clients. Nevertheless, the fiscal year 2019 LSC appropriation of \$415 million is still 18 percent lower than it was in fiscal year 2010. The fiscal year 2010 appropriation would be \$489.5 million in 2019 dollars. The fiscal year 2019 funding is down 43 percent from LSC's average appropriation of \$728,107,080 in 2019 dollars during the 1980s. At the same time, the number of people qualifying for assistance is over 10 percent higher than it was in 2007. LSC funding needs restoration in these good economic times when unemployment is low, and the stock market is high. The ABA fully supports LSC's request to restore its funding to \$593 million in fiscal year 2020, although that still will not meet the total need.
2. *Cost-Benefit:* The American Bar Association collects dozens of statewide studies of the cost-benefit impact of legal aid. All studies show a big positive impact: https://www.americanbar.org/groups/legal_aid_indigent_defendants/resource_center_for_access_to_justice/atj-commissions/atj_commission_self-assessment_materials1/studies/.
For example, Community Services Analysis LLC published a 2018 report regarding the return on investment of civil legal aid services in the State of Louisiana. The report reveals that, "For every \$1 invested in Louisiana Legal Aid during the year 2018, the citizens of Louisiana receive \$9.13 of immediate and long-term financial benefits."
3. *Constituent Service:* Civil legal aid is a constituent service performed in every State and congressional district in the country, complementary to and often by referral from your own constituent services staff. Key beneficiaries of legal aid services include: (1) Veterans; (2) Older Americans; (3) Rural Americans; (4) Domestic violence survivors; (5) Women, constituting 71.5 percent of clients; (6) Opioid victims, and (7) Natural-disaster victims.
4. *Polling:* 82 percent of those surveyed believe it is important to ensure everyone has access to civil legal help or representation, according to polling by Voices for Civil Justice: <https://voicesforciviljustice.org/wp-content/uploads/Lake-Tarrance-Expanding-civil-legal-aid-2013.pptx3.pdf>.

Conclusion: As the economy recovers, LSC funding should also recover. Down 43 percent from the 1980s average appropriation, down 18 percent from fiscal year 2010 (in 2019 dollars), and with over 10 percent more people qualifying for legal aid, the ABA fully supports the LSC funding request for restoration to \$593 million. Given LSC's excellent benefit/cost ratio and that 82 percent of LSC's funding supports access to civil legal help, we encourage you to heed constituents' views and support access to equal justice under law.

[This statement was submitted by Bob Carlson, President.]

PREPARED STATEMENT OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

Chairman Moran, Ranking Member Shaheen, 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 to fund cutting edge science. AERA recommends that the National Science Foundation (NSF) receive \$9 billion in fiscal year 2020. 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 dear colleague letter led by Senator Markey. AERA also recommends funding the Census Bureau at \$8.45 billion, including at least \$7.581 billion in direct funding for 2020 Decennial Census operations, consistent with the recommendation of The Census Project.

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. Many of our members depend on an accurate Census count and data available from the American Community Survey to do their work.

The EHR and SBE Directorates are central to the mission of the National Science Foundation (NSF) to advance fundamental knowledge and scientific breakthroughs and to ensure significant continuing advances across science, engineering, and education. Research and science supported by these directorates are intertwined with 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 and innovative methodologies but also to preparing our students and citizens to use new technologies and harness knowledge to enhance productivity, safety, security, and social economic well-being.

As indicated in the agency's budget request for fiscal year 2020, 95 percent of appropriated funds directly supported research and science, technology, engineering, and mathematics (STEM) education through grants and contracts in fiscal year 2018, with 77 percent of funding supporting research at colleges and universities. In addition, nearly 200,000 K–12 students 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. As stated in the NSF Strategic Plan 2018–2022: “NSF’s investments in basic research on how peoples learn, in the traditional period stretching from pre-kindergarten to college as well as continually throughout life, will be crucial to the advances in U.S. education needed to ensure that the Nation thrives in a rapidly evolving 21st century world.”

The EHR Directorate supports STEM education and education research from early childhood learning to doctoral work and beyond and promotes evidence-based innovations in teaching practices, instructional tools, and programs that advance STEM education and prepare 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.

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 key to improving teaching and learning and advancing STEM education.

The budget for SBE is not even 4 percent of the NSF budget, yet it provided approximately 62 percent of the Federal funding for basic research in the social, behavioral, and economic sciences at academic institutions in fiscal year 2018.

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) within SBE. 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. Adequate funding in fiscal year 2020 for NCSES would support critical activities to develop new data techniques building on administrative data and enhance data tools, techniques, and visualizations to facilitate access to statistical resources.

As you know, the public strongly supports a Federal investment in science. According to a report issued by the American Academy of Arts & Sciences, 71 percent of U.S. adults said that government investments in basic scientific research pay off in the long run. When asked about priorities for scientific research, 56 percent of respondents consider improving education and how our children learn to be an urgent priority. (American Academy of Arts and Science, *Perceptions of Science in America* 2018.)

On behalf of AERA, I thank both the Chairman and the Ranking Member for your ongoing recognition of the importance of providing NSF with the flexibility to determine directorate funding levels within the Research and Related Activities Account. AERA shares the opinion of Director Córdova, that this flexibility enables NSF to best “build a portfolio of the most exciting research across all fields.”

In addition to my attention in this testimony to the National Science Foundation, I also wish to emphasize the importance of adequate support for the Census Bureau, especially critical with the ramp up to the administration of the 2020 Decennial Census. AERA recommends funding the Census Bureau at \$8.45 billion, including at least \$7.581 billion in direct funding for 2020 Decennial Census operations. Even with the much-needed resources provided in the final fiscal year 2019 appropriations bill to plan for the 2020 Census, funding for the Bureau remains below the levels required to appropriately prepare for the decennial census. Adequate support for the Census Bureau will enable the necessary technology, methodologies, and staff for the rollout of the decennial census to ensure an accurate count of the U.S. population. 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 \$9 billion for the National Science Foundation and sharing our particular interest in the Education and Human Resources Directorate and the Directorate for Social, Behavioral, and Economic Sciences in fiscal year 2020. AERA would welcome the opportunity to work with you and your subcommittee to best further the crucial advances of the National Science Foundation. Please do not hesitate to contact me if AERA can provide additional information regarding this budget proposal or the significant science made possible through NSF support.

[This statement was submitted by Felice J. Levine, Executive Director.]

PREPARED STATEMENT OF THE AMERICAN GEOPHYSICAL UNION

The American Geophysical Union (AGU), a non-profit, non-partisan scientific society whose mission is to promote discovery in the Earth and space sciences for the benefit of humanity, appreciates the opportunity to submit testimony regarding the fiscal year 2020 budget request for the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF). The AGU, on behalf of its 60,000 Earth and space scientist members, respectfully requests that the 116th Congress appropriate:

- \$22.575 billion overall for NASA, including:
 - \$7.5 billion for the Science Mission Directorate,
 - \$2.097 billion for Earth Science,
 - \$2.995 billion for Planetary Science,
 - \$782 million for Heliophysics;
- at least \$6.2 billion overall for NOAA; and
- \$9 billion for NSF.

NATIONAL AERONAUTICS & SPACE ADMINISTRATION

AGU requests that Congress appropriate \$22.575 billion for NASA in fiscal year 2020—a 5 percent increase above the amount provided in fiscal year 2019. This increase will ensure that NASA is able to continue its work and preserve U.S. leadership in Earth and space science and exploration. Additionally, AGU requests that Congress appropriate \$7.5 billion for NASA’s Science Mission Directorate, an 8.6 percent increase over fiscal year 2019. A request of \$7.5 billion will allow NASA’s

Science Mission Directorate to advance the Administration's plans and the agency's current program of record and make critical progress towards achieving the scientific goals outlined in the National Research Council Decadal Surveys.

Our requests for NASA's Earth Science, Planetary Science, and Heliophysics missions mirror the requested 8.6 percent increase for the Science Mission Directorate.

Earth Science and Planetary Science Divisions

AGU requests that Congress appropriate \$2.1 billion for Earth Science in fiscal year 2020. More than a third of the U.S. economy is affected by climate, weather, and natural hazards. Missions within NASA's Earth Science Division give us greater insight into how our Earth is changing on daily and long-term scales in terms of weather, climate, air quality, water availability, soil nutrients, and other resources. NASA Earth Science produces critical information and data that public and private sector decision-makers, such as farmers, the military, retailers, and emergency managers, can use to mitigate the risks and understand the opportunities of the Earth's changes.

A particularly crucial source of Earth science data is our current fleet of Earth observation satellites. Robust funding for Earth Science will allow for the continuation of the Plankton, Aerosol, Cloud, and Ecosystem (PACE) and the Climate Absolute Radiance and Refractivity Observatory Pathfinder (CLARREO Pathfinder) missions, and for the implementation of the 2017 Earth Science Decadal Survey recommendation to competitively select future missions that address Designated and Earth System Explorer target observables. Competitively selected missions will help to constrain costs and resources, while simultaneously helping to leverage the talents of a broad array of scientists and universities. The Earth System Explorer missions will provide needed insight into sea level rise, changes to ozone concentrations, and the sources and sinks of CO₂ and methane, among other research areas.

AGU requests that Congress appropriate \$2.995 billion for Planetary Science in fiscal year 2020. NASA's Planetary Science Division is helping to expand our understanding of the universe, approximately 90 percent of which is still not well understood—even our own solar system. The awe-inspiring missions and discoveries of the Planetary Science Division inspire future generations of scientists and STEM professionals to choose science as a career. With appropriate funding, NASA can stay on schedule to launch the next Mars rover and a Europa mission in the 2020s, furthering our understanding of the conditions needed to sustain life. Additionally, robust funding for Planetary Science will allow NASA to pursue the Administration's Moon to Mars program without sacrificing other decadal priorities, including a balanced portfolio of missions and 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 Science Division

AGU requests that Congress appropriate \$782 million for Heliophysics in fiscal year 2020. Increased funding for NASA's Heliophysics Division will further our understanding of the Sun, helping to mitigate the hazards that solar activity poses to the ground and space-based platforms that strengthen our national security, as well as our economic and scientific competitiveness. Increased funding will support the new early career investigator program (ECIP), which is critical to creating the next generation of heliophysics scientists. This program is part of the Diversify, Realize, Integrate, Venture, Educate (DRIVE) initiative, the top priority of the Decadal Survey. Increased investment in DRIVE will enable novel technologies for next generation missions, help to create DRIVE Science Centers, and provide researchers with the necessary tools and platforms to conduct cutting-edge multidisciplinary research.

Robust funding for NASA's Heliophysics division will also advance implementation of the agency's 2-year cadence of small and mid-size missions, which often accomplish scientific goals for a fraction of the cost of a flagship mission and allow heliophysics researchers to participate and respond rapidly. These missions accelerate scientific understanding while simultaneously developing the scientific workforce through increased research opportunities for students and faculty.

NASA's Heliophysics Division advances our understanding of the threat of space weather, as directed by the 2016 National Space Weather Action Plan. The Division carries out activities related to basic research into solar radiation and forecasting and studies ways to mitigate the effects of big space weather events, which have can damage our space- and ground-based national security assets, aviation systems,

power grid, and electric rail systems. Additional funding for space weather research will support innovation in observational capabilities and continue development of the Space Weather Science Applications Project that advances research-to-operations, operations-to-research, and computational aspects of space weather mitigation.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

AGU requests that Congress appropriate at least \$6.2 billion for NOAA in fiscal year 20, a 14.3 percent increase over the fiscal year 2019 appropriated level for NOAA. Investing in NOAA not only keeps communities around the Nation resilient in the face of natural hazards, but also provides superior economic and national security services by enabling businesses and governments to better manage risk.

The forecasts, infrastructure, and research provided by NOAA save lives in time-sensitive emergencies. Flooding occurs in every county in the U.S., and NOAA predicts that an estimated 200 million people are at risk for flooding in their communities this spring, in addition to the record flooding that has already occurred in Nebraska, Minnesota and Iowa. Strong support for NOAA will allow the agency to continue creating detailed flooding forecasts and developing monitoring systems for the millions of Americans who do not currently have them; maintain the NEXRAD radar system used for 85 percent of all tornado and severe storm warnings; and continue the satellite rescue program that has saved over 43,000 lives by locating aviators, mariners, and land-based users in distress. In addition, continued and predictable support for both geostationary and polar orbiting satellites such as the GOES series and JPSS will ensure that we are equipped to collect data that is high quality and reliable. Finally, the continuation of uninterrupted data through programs such as the Polar Follow On, which serves as the next phase for the JPSS satellites, plays a critical role in keeping American families safe by ensuring that forecasters and decision makers have the best available data to assess risk.

NOAA is also essential to our Nation's economic stability. From coast to coast, one third of U.S. GDP is affected by weather and the environment. In 2018 alone, the U.S. saw 12 major weather and climate disaster events that resulted in \$91 billion in damages. For example, losses from weather-related aviation delays alone are estimated at more than \$1 billion per year, and NOAA drought forecasts are worth up to \$8 billion per year to the farming, transportation, tourism, and energy sectors. From large corporations to small businesses, the decision-based forecasts provided by NOAA save vital time, money, and resources.

NOAA also plays a unique and vital role in supporting homeland security and national defense. The Pentagon reports that flooding, drought, and wildfires driven by climate change pose a threat to two-thirds of the U.S. military's installations and expects climate change worldwide to cause more extreme weather, food scarcity, and mass migration, which leads to instability. The Pentagon classifies climate change as threat multiplier, and in order to combat these issues, we need the best science available. Without robust funding, we risk losing the data needed to make informed and proactive decisions, and our national security will be left in a dangerously vulnerable position.

NATIONAL SCIENCE FOUNDATION

AGU requests that Congress appropriate \$9 billion for NSF in fiscal year 2020, an almost 11.5 percent increase over the fiscal year 2019 appropriated level for NSF. Ambitious and robust funding for NSF is critical if the U.S. hopes to maintain its leadership in science and technology and reap the economic and national security benefits of that leadership. According to the most recent OCED report, China will surpass the United States in total R&D funding from all sources in 2019. NSF accounts for only 4 percent of Federal R&D spending but supports nearly 60 percent of the nonmedical basic research at our colleges and universities. Research and education programs supported by NSF help increase and develop the knowledge base needed to push the frontiers of science, mathematics, and engineering disciplines, contribute to the development of the future science and technology workforce, underpin new fields of inquiry, and promote interdisciplinary research and education.

Increased funding for NSF will allow the agency to pursue its Ten Big Ideas, including growing Convergence Research and the Inclusion Across the Nation of Communities of Learners of Underrepresented Discoveries in Engineering and Science (NSF INCLUDES) program. These two programs will promote transformational science, the first by creating a platform for the integration of multiple science and engineering disciplines to address extremely challenging and complex scientific questions and pressing societal needs; and the second by creating a capable and innovative workforce that reflects the diversity of our Nation.

[This statement was submitted by Lexi Shultz, Vice President, Public Affairs and Brittany Webster, Program Manager, Public Affairs.]

PREPARED STATEMENT OF THE AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM

On behalf of the Nation's Tribal Colleges and Universities (TCUs), which collectively are the American Indian Higher Education Consortium (AIHEC), we thank you for the opportunity to share our 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 Program (NASA-MUREP).

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 \$16,000,000 for fiscal year 2020. This program also awards grants to Alaska Native Serving and Native Hawaiian Serving Institutions.

—*Louis Stokes Alliance for Minority Participation (LSAMP)*: TCUs urge the subcommittee to support NSF-LSAMP program with an added emphasis for American Indian, Alaska Native, and TCU students.

National Aeronautics and Space Administration (NASA)

—*NASA Headquarters, Office of Education—Minority University Research and Education Programs (MUREP)*: TCUs urge the subcommittee to continue the NASA MUREP program with robust funding and support a TCU-specific program within MUREP at \$5,000,000 for fiscal year 2020.

Tribal Colleges and Universities: Training the Nation's Native STEM Workforce.—TCUs are an essential component of American Indian/Alaska Native (AI/AN) STEM education and research. Currently, 37 TCUs operate more than 75 campuses 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 TCU students represent at least 233 of the 573 federally recognized Tribes and hail from more than 30 States. Nearly 80 percent receive Federal financial aid. TCUs serve over 160,000 American Indians, Alaska Natives, 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. Each TCU is committed to improving the lives of its students through higher education and to moving AI/ANs toward self-sufficiency. To do this, TCUs serve many roles in their reservation communities functioning as career and business centers, open access computer labs, STEM summer camps, Saturday academies, community farms, economic development centers, GED or HiSET training and testing centers, place-based applied research hubs, and more.

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. For example, 16 TCUs have established nursing programs, 12 TCUs have established pre-engineering programs, one of which also offers bachelor's degree programs in engineering, and seven TCUs have established STEM teacher education programs through NSF-TCUP. These efforts are preparing AI/AN nurses, engineers, and science and math teachers who are collectively strengthening the STEM pipeline in Indian Country. TCUs train other professionals in high-demand fields, including agriculture and natural resources management and information technology. By teaching the job skills most in demand on our reservations, TCUs are laying a solid foundation for tribal economic growth, with benefits for surrounding communities and the Nation as a whole. But that is not enough. TCU leadership understands that we must do more—we must move beyond simple workforce training. Today, TCUs are tackling the tougher—and much more significant—issue of job creation, because we know that to break the cycle of generational poverty and end the culture of dependency that grips so much of Indian Country, simply preparing students for a very limited labor market is not enough. We must create new industries, new businesses, and build a culture of self-sufficiency and innovation. Our job creation initiative focuses initially on advanced manufacturing, through a partnership with the U.S. Department of Energy, National Laboratories, TCUs, Tribes, and industry.

NATIONAL SCIENCE FOUNDATION

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 \$16,000,000.—The NSF-TCUP, administered by the Education and Human Resources Directorate, is a competitive grant program that enables TCUs and Alaska Native Serving/Native Hawaiian Serving Institutions (ANNHs) to develop and expand critically needed STEM education and research programs relevant to their respective communities from Michigan to Alaska and Hawaii. Through this program, TCUs and ANNHs have been awarded grants to enhance their STEM instructional courses, workforce development, research, and outreach programs.

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 2017–18 show that 61 percent required remedial math. Our data indicates that while 68 percent will successfully complete the course, many will not have done so in 1 year. Without question, a large proportion of the TCUs' already limited resources are dedicated to addressing the continual failings of K–12 education systems.

Through NSF-TCUP grants, TCUs and ANNHs are actively working to prevent this problem by developing strong partnerships with their K–12 feeder schools to engage students in culturally appropriate STEM education and outreach programs. These efforts include weekend academies and summer STEM camps that reinforce and supplement current K–12 STEM programs.

NSF-TCUP provides crucial capacity-building assistance and resources to TCUs and ANNHs. Since the program began, 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 program, 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. NTU students will now be prepared to fill high demand STEM jobs that require a degree from an ABET-accredited program.

Through NSF-TCUP, 12 TCUs have established engineering or pre-engineering programs and are developing partnerships with larger institutions that enable AI/AN students to seamlessly transfer to graduate-level programs. The first graduate of United Tribes Technical College's (Bismarck, ND) pre-engineering program, Jeremy McLeod (Turtle Mountain Band of Chippewa Indians) is an example of how students, tribal communities and States benefit from these partnerships. After graduating from UTTC, Jeremy completed his baccalaureate degree in civil engineering at South Dakota School of Mines and Technology. Upon graduation, he was employed with Knife River Corporation as a project manager and is now a water resource engineer at the North Dakota State Water Commission. He also serves as an advisory board member for the pre-engineering program at UTTC.

Across Indian Country, TCUs provide students with the opportunity to serve their communities through place-based research that has national and international impacts. At Northwest Indian College (NWIC) (Bellingham, WA), students conduct complex research related to food security focused on salmon, shellfish, and Indigenous sea cucumbers. NWIC also has a partnership with Western Washington University through which students continue to master's degree programs. Aaniiih Nakoda College (Harlem, MT) monitors streams for contaminants and investigates 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. Research at SBC shows that students participating in research opportunities have retention rates that are double the rate of students who are not engaged in research.

Programs funded through the NSF-TCUP are highly leveraged and successful. For example, students from Southwestern Indian Polytechnic Institute (Albuquerque, NM) and NTU compete in NASA's national "Swarmathon" competition. For the past 3 years, the SIPI student team received high awards, placing first in the Nation in 2017 and second in 2018. SIPI has achieved other successes of national note: NSF Science and Engineering Indicators (2016) showed that of students graduating with a science or engineering degree, AI/ANs comprised 0.3 percent, of which 13 percent were female. In a time when engaging diverse populations in higher education is a priority and retaining female students in STEM fields is a challenge, the SIPI pre-engineering program is doing something right. In 2017, SIPI's retention

rate for engineering students was 44 percent. Its retention rate for female engineering students was 67 percent. SIPI's female students attribute their success to several TCU-specific factors: caring faculty who set expectations, sense of community, team research experiences, culturally grounded place-based experiential learning, and unfailing student support.

Despite its advances and successes, funding for the NSF-TCUP program has been stagnant for many years. Therefore, not all of the TCUs have had an opportunity to benefit from this very important program. *We urge the subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of \$16,000,000.*

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 fiscal year 2019, \$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 the center for expanding AI/AN student research opportunities, sharing best practices, and student support. Through the combined efforts of the 34 ANLSAMP colleges and universities, more than 2,000 AI/ANs and under-resourced 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 1 percent of the total \$46 million was awarded to TCUs in fiscal year 2019. (\$200,000 was provided in new funding, as a grant supplement, to TCUs in fiscal year 2019.) *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)

Office of Education/Minority University Research and Education Programs (MUREP): TCUs urge the subcommittee to continue the NASA MUREP program with robust funding and support a TCU specific program within MUREP at \$5,000,000 for fiscal year 2020.—Under the MUREP umbrella, NASA has funded TCUs in various programs for the past several years at a modest level. For example, in fiscal year 2014, NASA awarded \$1.28 million to TCUs under MUREP, with total TCU support at \$1.55 million. In fiscal year 2015, NASA MUREP provided \$2 million to TCUs, with total TCU support of \$2.53 million. In fiscal year 2016, TCU support was \$1.7 million under MUREP and \$2.7 million overall. With these modest funding levels, NASA MUREP is only able to fund three TCUs each year, each of which receives a 3-year award. In fiscal year 2017, the 3-year awards went to SIPI to continue its engineering/robotics work, NWIC, and Chief Dull Knife College (Lame Deer, MT).

Under a previous grant from NASA, SIPI students and local AI/AN high school students engage in hands-on projects through which they learn computer programming, computer networking, microprocessors, sensor technology, 3D printing, and design engineering. The annual NASA Swarmathon, funded by MUREP and mentioned previously, is an advanced robotics competition in which students test their STEM skills by writing complex robotic codes and building robots equipped with sensors, webcams, and GPS systems. The STEM knowledge and analytical skills needed to compete in Swarmathon are the same high-demand skills needed to advance our space technology and future space exploration. We are proud that the SIPI teams ranked in the top three nationally over the past 4 years.

AIHEC strongly disagrees with the administration recommendation to eliminate the MUREP program as proposed in the President's fiscal year 2018 and fiscal year 2019 Budget Requests. The NASA MUREP program provides TCUs with resources to advance and build strong STEM programs across Indian Country. *TCUs urge the subcommittee to continue the NASA MUREP program through robust funding and to support a Tribal College and University-specific program within MUREP at \$5,000,000 for fiscal year 2020.*

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 and request your full consideration of our fiscal year 2020 appropriations requests. Thank you.

PREPARED STATEMENT OF THE AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

NATIONAL SCIENCE FOUNDATION

The American Institute of Biological Sciences (AIBS) appreciates the opportunity to provide testimony in support of fiscal year 2020 appropriations for the National Science Foundation (NSF). We encourage Congress to provide NSF with at least \$9 billion in fiscal year 2020.

AIBS is a scientific association dedicated to promoting informed decisionmaking 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 decisionmaking.

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. The translation of biological knowledge into formal and informal education programs fosters the development of a scientifically and technically informed workforce. NSF research programs are important engines powering our Nation's economy. Over the past 50 years, roughly half of the economic growth at private businesses in the United States has resulted from advances in knowledge resulting from research and development. Research funding from NSF has given rise to successful companies, such as Genentech, Allylix, and Chromatin, as well as new industries that provide more robust food crops or disease detection tools and techniques. Additionally, data show that employers continue to seek workers with scientific and technical skills. Since 1960, growth in U.S. employment in science and engineering has outpaced growth in total employment, increasing at an average rate of 3 percent per year.

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*: Long before Zika virus made headlines in the United States, the NSF was supporting research to study the environmental and social factors that put people at risk from diseases carried by mosquitos, to understand the physiology and life cycles of disease vectors, to model the spread of mosquito-borne disease, and to understand the evolution of insecticide resistance. Knowledge gained from this work enabled public health officials to respond quickly when an outbreak of Zika virus started in the U.S. in late 2015.

—*Mobilizing big data*: Access to and analysis of vast amounts of data are driving innovation. The NSF enables integration of big data across scientific disciplines, including applications in the biological sciences. Digitization of natural science collections involves multi-disciplinary teams, which have put more than 95 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. The NSF funds research on how these techniques can be used to bio-manufacture new materials, treat diseases, and accelerate the bioeconomy.

Other examples of research that have benefited the public are chronicled in a recent AIBS report, “Biological Innovation: Benefits of Federal Investments in Biology,” which is available at https://www.aibs.org/public-policy/biological_innovation_report.html.

The NSF supports recruitment and training of our next generation of scientists. Support for science education for undergraduate and graduate students is critically

important to our research enterprise. Students learn science by doing science, and NSF programs engage students in the research process.

NSF awards reached 1,800 colleges, universities, and other public and private institutions across the country in fiscal year 2018. 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 57,700. Support for Graduate Research Fellowships and CAREER grants would be cut by 10 percent compared to fiscal year 2018 under the President's proposal, while the budget for Faculty early career development programs would shrink by 13 percent. Other programs, such as the NSF Research Traineeship and Postdoctoral Research Fellowships in Biology, which provide opportunities to train biologists in high priority areas like data-enabled science and research using biological collections, are also facing budget cuts.

The NSF is 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 diverse geographic scales.

Federal R&D investments as a percentage of Gross Domestic Product are declining. The U.S. is still the largest performer of R&D globally, but its share of worldwide R&D has diminished over the past 15 years. Other countries, especially China, are rapidly increasing their investments in science. To fully realize the benefits of NSF-supported research and to remain at the global forefront of innovation, the government must make new and sustained investments in the NSF. Unpredictable swings in funding can disrupt research programs, create uncertainty in the research community, and stall the development of the next great idea.

Funding rates have become "dangerously low" according to NSF. When pre-proposals are considered, the funding rate for some program areas within the Directorate for Biological Sciences are in the single digits. The NSF is the primary Federal funding source for biological research at our Nation's universities and colleges, providing 69 percent of extramural Federal support for non-medical, fundamental biological and environmental research at academic institutions.

The President's budget request for fiscal year 2020 proposes a 12.5 percent cut to NSF, including a 13 percent reduction in its research activities. If enacted, this budget will hurt research and undermine our ability to address national challenges. Congress provided NSF with \$8.075 billion in funding for fiscal year 2019, an increase of 4 percent. This increase allows for critical Federal investments in scientific and educational research as well as support for the development of the scientific workforce. We encourage Congress to continue supporting increased investments in our Nation's scientific capacity.

Funding NSF at \$9 billion in fiscal year 2020 is a step toward responding to years of stagnant funding that have slowed discovery. The requested funding enables NSF to accelerate progress on its 10 Big Ideas. These are important new cutting-edge initiatives at the frontiers of science and engineering. These include research programs such as Understanding the Rules of Life (URoL), Navigating the New Arctic (NNA), Growing Convergence Research (GCR), and Harnessing the Data Revolution for 21st-Century Science and Engineering (HDR).

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, Public Policy Manager and Robert Gropp, Executive Director.]

PREPARED STATEMENT OF THE AMERICAN LIBRARY ASSOCIATION

On behalf of the American Library Association (ALA), I write to respectfully request adequate funding for the U.S. Census Bureau to conduct the 2020 Census, including funding for Integrated Partnership and Communications activities and for Questionnaire Assistance Centers.

Census experts have raised concerns that the President's budget proposal for fiscal year 2020 will be inadequate for the Census Bureau to carry out its Constitutional obligation to count every person residing in the United States.¹

¹See letter from The Census Project, et al., to the Senate and House Appropriations Subcommittees on Commerce, Justice, Science, and Related Agencies, April 16, 2019, available at <http://www.ala.org/advocacy/sites/ala.org/advocacy/files/content/Sign-ons/fy-2020-census-project-sign-on-letter-pre-cjs-mark-up-4-16-19.pdf>.

If the Census Bureau does not have the resources necessary to do its job, then states and communities across the country will lose funding, representation, and information crucial to decisionmaking. That loss of funding and representation will last for a decade—and the loss of information will last forever.

INTEGRATED PARTNERSHIP AND COMMUNICATIONS ACTIVITIES

We urge the subcommittee to provide adequate funding for Integrated Partnership and Communications activities, which are essential to achieving an efficient and accurate Census.

As the Census Bureau notes, in the upcoming fiscal year, “The formation of key national partnerships and the cultivation of hundreds of thousands of other local relationships necessary to ensure the Census Bureau can maximize self-response across all localities and population groups will occur at peak levels of intensity.”²

ALA and libraries across the country will be among those partners working to provide information to the public about responding to the 2020 Census. As a demonstration of this commitment, on April 1, 2019, the president of the American Library Association spoke at the Census Bureau’s press briefing marking 1 year to Census Day.³ Adequate funding for Integrated Partnership and Communications activities ensures that partners will have the messages and materials to support their communities in achieving a complete count.

QUESTIONNAIRE ASSISTANCE CENTERS

Similarly, it will be critical to provide sufficient funding for Questionnaire Assistance Centers. In the fiscal year 2019 conference report, Congress directed the Census Bureau to “devote funding to . . . open local questionnaire assistance centers in hard-to-count communities” in the 2020 Census.⁴ However, the Census Bureau’s fiscal year 2020 budget submission does not describe how the Bureau will implement that direction or what additional resources are needed in order to do so.

On March 19, 2019, ALA joined 90 stakeholder organizations in a letter to the Census Bureau, expressing our view that “a robust program of Questionnaire Assistance Centers is crucial to provide an effective on-the-ground presence for the 2020 Census in local communities in order to raise public awareness, deliver trustworthy information, and provide options for self-respondents to receive questionnaire assistance.”⁵

With the reduced number of regional and area census offices in the 2020 Census, we expect that many people will turn to their local public library for information about the Census. While libraries are preparing in order to address the public’s questions about the Census, they cannot do so alone, and they should not have to. In fact, libraries hosted more than 6,000 Questionnaire Assistance Centers and Be Counted sites in the 2010 Census.⁶ We believe that libraries are ready to do so again, if Congress and the Census Bureau commit the funding to operate those sites.

On April 25, 2019, the Census Bureau provided a report to the Appropriations Committees outlining its plan to implement the fiscal year 2019 conference report language through a “Mobile Response Initiative”—essentially a new term for Questionnaire Assistance Centers. We ask the subcommittee to provide the necessary funding and direction to the Census Bureau to implement this plan at minimum. However, important questions remain as to whether the plan will be sufficient to provide needed assistance in hard-to-count communities. We encourage the subcommittee to seek clarification of the Census Bureau’s plan and, if necessary, provide resources and direction to enlarge the operation.

²U.S. Census Bureau, “U.S. Census Bureau’s Budget fiscal year 2020,” March 2019, at CEN-95, available at https://www.commerce.gov/sites/default/files/2019-03/fy2020_census_congressional_budget_justification_0.pdf.

³U.S. Census Bureau, “Census Bureau Press Briefing Marks One Year Out From Census Day,” April 1, 2019, available at <https://www.census.gov/newsroom/press-releases/2019/one-year-out.html>.

⁴H. Rept. 116-9 (2019), at 611.

⁵Letter from 90 stakeholder organizations to Census Bureau Director Dillingham, “Questionnaire Assistance Centers for the 2020 Census—Stakeholder Recommendations,” March 19, 2019, available at <http://www.ala.org/advocacy/sites/ala.org/advocacy/files/content/govinfo/Sign-ons/Questionnaire%20Assistance%20Center%20Recommendations%20031919%20%281%29.pdf>.

⁶Geoff Jackson, Keith Wechter, and Susanna Winder, “2010 Census Be Counted and Questionnaire Assistance Centers Assessment,” U.S. Census Bureau (May 22, 2012), at 27, available at <https://www2.census.gov/programs-surveys/decennial/2010/program-management/5-review/cpex/2010-memo-194.pdf>.

CONCLUSION

Thank you for the opportunity to submit this testimony regarding appropriations for the U.S. Census Bureau in fiscal year 2020. We ask for the subcommittee's support in providing adequate funding, including for Integrated Partnership and Communications activities and for Questionnaire Assistance Centers.

[This statement was submitted by Gavin Baker, Assistant Director, Government Relations.]

The American Library Association ("ALA") is the foremost national organization providing resources to inspire library and information professionals to transform their communities through essential programs and services. For more than 140 years, the ALA has been the trusted voice for academic, public, school, government and special libraries, advocating for the profession and the library's role in enhancing learning and ensuring access to information for all.

PREPARED STATEMENT OF THE AMERICAN MATHEMATICAL SOCIETY
NATIONAL SCIENCE FOUNDATION

The American Mathematical Society is a professional society, home to approximately 30,000 individuals and over 500 institutional members. The AMS has been serving the mathematical sciences community since 1888. The Society's programs and services for its members and the global mathematical community include professional programs; publications of books and journals; meetings and conferences; support for young scholars programs; and tools for researchers such as MathSciNet. The organization is headquartered in Providence, Rhode Island, with a Government Relations Office in Washington, DC.

The American Mathematical Society (AMS) appreciates the opportunity to submit written testimony in support of fiscal year 2020 appropriations for the National Science Foundation (NSF).

*We encourage Congress to provide the NSF with \$9 billion in fiscal year 2020.*¹

The NSF is a key funding agency for the mathematical sciences. Most mathematics research is done by Ph.D. mathematicians at universities and colleges. The NSF accounts for approximately 64 percent of Federal support for academic research in the mathematical sciences.

The NSF is the only Federal agency that supports research and education across all fields of science, engineering, and mathematics and at all educational levels. Research and education programs supported through the NSF are essential for increasing and developing the knowledge base needed for pushing the frontiers of science, mathematics, and engineering disciplines; developing new fields of inquiry; and supporting technological innovation. Support for the scientific training of undergraduate and graduate students is critically important to our research enterprise. Other NSF investments in education support broadened participation in STEM fields and development of the STEM workforce in demand by American employers.

The entire country benefits from NSF funding and Chairman Moran's State can serve as an example.²

Kansas, an EPSCoR State,³ received \$42 million in NSF funding in fiscal year 2017. There were 138 NSF grants awarded to researchers in Kansas. Funds go toward research—for example, researchers in the Kansas State University Medical Component Design Laboratory used NSF funding to develop supplemental sensors for ingestible-pill technology that monitor the health of livestock, protecting against disease outbreaks. Funds go toward STEM education—for example, The Noyce Teacher-Leaders for Western Kansas project at Fort Hays State University is developing STEM teachers for rural Kansas communities.

The NSF has funded mathematics research and education in Kansas:

—At Wichita State University, Professor Victor Isakov is making groundbreaking changes in the way we make measurements in biomedicine, economics, geophysics, and material science. In particular, the results of his work will dra-

¹This is the same amount supported by the Coalition for National Science Funding.

²<https://cnsf.us/factsheets2017.cfm>

³EPSCoR enhances research competitiveness of targeted jurisdictions (States, territories, commonwealth) by strengthening STEM capacity and capability. For more information, see <https://www.nsf.gov/od/oia/programs/epscor/>

matically enhance the quality of a cheap, fast, and safe diagnostic imaging method called electrical impedance tomography.⁴

—Kansas State University is the site of an NSF-funded Research Experience for Undergraduates (REU) program in mathematics. Each summer, students from across the country come to Manhattan where they are trained to become independent researchers while working on problems in the important fields of network security and biomathematics.

—Kansas State Professor Dave Auckly has funding to expand the Navajo Nation Math Circles.⁵ This includes a mathematical visitor program sending mathematicians to schools to work with students and their teachers as well as inclusion of mathematics in public festivals to increase community mathematical awareness.

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 intended for specific applications. 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”.^{6,7}

Strong and sustained investment will allow the NSF to continue to support innovative and transformational scientific research that fuels the American economy, strengthens national security, maintains our global competitiveness, improves public health and the quality of life for Americans, and contributes to the development of the next generation of science, mathematics, and engineering researchers.

Our global competitors are making tremendous investments in scientific research yet funding for research in the U.S. has only increased incrementally. Because our national investment in basic science research has been declining as a share of the Federal budget for decades, we are losing our global edge. To compare, China has grown its R&D spending rapidly since 2000, at an average of 18 percent annually. During the same period, U.S. R&D spending grew by 4 percent [per year].⁸

While our competitors (and allies) are increasing support for science research and education, the U.S. is failing to fund many important projects. According to the National Science Board, approximately \$3.92 billion of cutting-edge research deemed “very good or higher” in NSF’s merit criteria was unfunded in fiscal year 2017.

A strong level of funding together with a predictable pattern of funding will facilitate a robust stream of high-level research and researchers that, in turn, will support the level of technological development needed to remain globally competitive.

Thank you for your consideration of this request, and for your prior efforts on behalf of the NSF.

[This statement was submitted by Jill Pipher, President and Karen Saxe, Director of Government Relations.]

PREPARED STATEMENT OF THE AMERICAN PHYSIOLOGICAL SOCIETY

The American Physiological Society (APS) thanks you for your sustained support of science at the NSF and NASA. In this statement we offer our recommendations for fiscal year 2020 funding levels for these two agencies.

—The APS urges you to fund the fiscal year 2020 NSF budget at a level of at least \$9 billion to prevent further erosion of program capacity and allow researchers to take advantage of scientific opportunities.

—The APS urges you to restore cuts to NASA’s life sciences research budgets and to increase funding for the Human Research Program.

NSF and NASA support scientific research and technology development programs essential to the future technological excellence and economic stability of the United States. Federal investment in this research is critically important because breakthroughs in basic and translational research provide the foundation for new tech-

⁴https://nsf.gov/awardsearch/showAward?AWD_ID=1514886&HistoricalAwards=false

⁵Navajo Nation Math Circles was featured in the documentary “Navajo Math Circles,” which aired nationwide in September 2016 on the Public Broadcasting System.

⁶<https://www.nap.edu/catalog/15269/the-mathematical-sciences-in-2025>

⁷<https://www.nap.edu/catalog/13373/fueling-innovation-and-discovery-the-mathematical-sciences-in-the-21st>

⁸<https://www.nsf.gov/statistics/2018/nsb20181/report>

nologies to fuel our economy and make it possible for the United States to remain a global leader in science, technology and engineering. According to the 2018 Science and Engineering Indicators, other countries including China continue to increase basic research funding at a rate that outpaces the growth of U.S. investments.¹

NSF funds outstanding research and education programs

NSF provides support for 25 percent of all federally funded basic science and engineering as well as 69 percent of the support for non-medical research in biology. NSF invests in basic biological research across a broad spectrum of sub-disciplines along with as the equipment and other infrastructure scientists need for their work. Time and time again we have seen that knowledge gained through basic biological research provides foundation for more applied studies that sustain the health of animals, humans and ecosystems. Moreover, NSF-funded research has led to countless new and unexpected discoveries that could not have been envisioned when the research began. These unforeseen applications have had enormous impacts on science, health and the world's economy.

The majority of the NSF funding is awarded in the form of grants selected through competitive, merit-based peer review. Merit review ensures that the best possible science is supported. Both the scientific reviewers and NSF program staff consider not only the intellectual merit of each research proposal, they also consider its broader impacts. NSF's criteria for these broader impacts address the potential for the research to benefit society or to achieve specific outcomes. NSF has an exemplary record of funding research with far-reaching potential. Since its inception in 1950, NSF has supported the work of 236 Nobel Laureates, including the 2018 winners of the Chemistry, Physics and Economics prizes.

Biological research is just one part of the NSF portfolio. The APS believes that each of the NSF directorates support research that is critical to NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense. . ." Collaboration among scientific disciplines is increasingly recognized as the best and most efficient way to advance science. This will only be possible with strong support for all disciplines of research.

In addition to funding innovative research in labs around the country, the NSF education programs foster the next generation of scientists. The APS is proud to have partnered with NSF in programs to provide training opportunities and career development activities to enhance the participation of underrepresented minorities in science. We believe that NSF is uniquely suited to foster science education programs of the highest quality, and we recommend that Congress continue to provide Federal funds for science education through the NSF.

The APS joins the Federation of American Societies for Experimental Biology (FASEB) in recommending that the NSF be funded at a level of at least \$9 billion in fiscal year 2020.—The NSF budget has been flat in real terms for approximately the last 15 years. When NSF Director Dr. France Cordova testified before the House Appropriations Subcommittee on Commerce, Justice and Science on March 26, 2019, she stated that each year the NSF receives approximately \$4 billion worth of well-rated proposals that the agency is unable to fund within its current budget. Providing the agency with a significant budget increase would allow the NSF to support approximately 1,000 additional research grants. The NSF is poised to address major challenges facing our Nation and our world in the 21st Century, but it needs adequate resources to continue to carry out its mission.

Support for Life Sciences Research should be increased at NASA

NASA sponsors research across a broad range of the basic and applied life sciences, including gravitational biology, biomedical research and the Human Research Program (HRP). The gravitational biology and biomedical research programs explore fundamental scientific questions through research carried out both on Earth and aboard the International Space Station, which provides an environment for the conduct of experiments in space. NASA's HRP conducts focused research and develops countermeasures with the goal of enabling safe and productive human space exploration. The program funds more than 300 research grants that go to academic researchers in more than 30 States around the country.

During prolonged space flight, the physiological changes that occur due to weightlessness, increased exposure to radiation, confined living quarters, and alterations in eating and sleeping patterns can lead to debilitating conditions and reduced ability to perform tasks. Scientists are actively engaged in research that explores the physiological basis of these problems with the goal of contributing to the identification of therapeutic targets and development of novel countermeasures. One

¹ <https://www.nsf.gov/statistics/2018/nsb20181/report/sections/overview/introduction>

of the most well-known studies of these physiological changes is the NASA Twin Study which compared identical twins and fellow astronauts Mark and Scott Kelly to see what changes occurred following Scott Kelly's 1 year mission aboard the International Space Station.² The knowledge gained from this research is not only relevant to humans traveling in space, but is also directly applicable to human health on Earth. For example, some of the muscle and bone changes observed in astronauts after prolonged space flight are similar to those seen in patients confined to bed rest during periods of critical illness as well as during the process of aging.

NASA is the only agency whose mission addresses the biomedical challenges of human space exploration. Over the past several years, the amount of money available for conducting this kind of research at NASA has dwindled. In the past, appropriations legislation specified funding levels for biomedical research and gravitational biology, but ongoing internal reorganizations at NASA have made it difficult to understand how much money is being spent on these programs from year to year. The APS recommends that funding streams for these important fundamental research programs be clearly identified and tracked within the NASA budget. The APS also recommends restoration of cuts to peer-reviewed life sciences research to allow NASA-funded scientists to conduct research that will be critical in not only supporting the success of future long-range manned space exploration but also leading to innovative discoveries that can be applied to Earth-based medicine. As highlighted above, investment in the basic sciences is critical to our Nation's technological and economic future. This innovative engine of research fuels our world leadership and our economy. The APS urges you to make every effort to provide these agencies with increased funding for fiscal year 2020.

The APS is a nonprofit devoted to fostering education, scientific research and dissemination of information in the physiological sciences. The Society was founded in 1887 with 28 members and now has over 10,000 members, most of whom hold doctoral degrees in physiology, medicine and/or other health professions.

PREPARED STATEMENT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

The American Psychological Association (APA) is a scientific and professional organization of more than 118,000 psychologists and affiliates. APA is the largest scientific and professional organization representing psychology in the United States and is the world's largest association of psychologists. APA works to advance the creation, communication, and application of psychological knowledge to benefit society and improve people's lives.

NATIONAL SCIENCE FOUNDATION (NSF)

APA urges the Committee to fund the National Science Foundation (NSF) at \$9 billion in fiscal year 2020.

The Coalition for National Science Funding, an alliance of over 140 universities, businesses, and scientific associations also endorses this level of support for NSF, the only Federal research agency "charged with the promotion of scientific progress across all scientific and engineering disciplines" and one that is vital to U.S. economic health, educational achievement, global competitiveness, and national security.

Support Core Psychological Research at NSF

NSF is the only Federal agency whose primary mission is to support basic research and education in math, engineering and science—including the behavioral and social sciences. NSF's investment in basic research across these disciplines has allowed for extraordinary scientific and technological progress, ensuring continued economic growth, improvements in the design, implementation and evaluation of public education, strengthened national security, and the generation of cutting-edge new knowledge.

Although psychologists receive funding from various programs within NSF, most core psychological research is supported by the Social, Behavioral and Economic Sciences Directorate (SBE), which focuses on the variables that determine human behavior across all ages, interactions among individuals and groups, and the development of social and economic systems. In addition to core behavioral research in cognitive neuroscience, human cognition and perception, learning and development, and social psychology, SBE will continue to invest funds to participate in special initiatives and cross-directorate programs that address vital national priorities.

² <https://www.nasa.gov/feature/nasa-twins-study-confirms-preliminary-findings>

The Biological Sciences Directorate (BIO) at NSF also provides support for research psychologists who ask questions about the principles and mechanisms that govern life at the level of the genome and cell, or at the level of a whole individual, family or species. In previous testimony, APA has expressed concern about diminishing support for key behavioral research programs within this Directorate, most notably those focused on learning and cognition.

The Computer and Information Science Engineering Directorate (CISE) is of particular importance given the emphasis from both Congress and the administration on emerging technology, artificial intelligence (AI), and autonomous vehicles. Psychology has an essential place within each of CISE's divisions. Regardless of the technology, human behavior plays an essential role in its design and implementation. NSF should receive support to allow full investment into the ambitious work proposed by NSF's 10 Big Ideas in addition to, and not in replacement of, the core research programs being done within the directorates.

Counter Specific Threats to Basic Science, NSF Merit Review, and the Behavioral and Social Sciences

Addressing questions about human behavior is as critical to our Nation's survival and well-being in a global context. Alongside APA, scientific and industry leaders, both private and public, continue to urge members of Congress to strongly support all individual scientific disciplines and NSF Directorates, and to avoid attacking individual, peer-reviewed grants funding behavioral and social science projects (including those of psychologists). Basic research, by nature, is aimed at increasing our body of knowledge to address both known and unknown challenges today and in the future. For example, basic psychological research today is essential for the continued development of AI, self-driving vehicles, and other emerging technologies. Failing to support basic research, including behavioral and social science, today undermines our ability to confront the unforeseen challenges and opportunities of tomorrow.

DEPARTMENT OF JUSTICE (DOJ)

APA is deeply committed to reforming the criminal justice system, supporting those with mental illness within the system, meeting the needs of victims of violence, and ensuring that the best scientific evidence is funded and used to improve programs and policies.

Support Evidence-Based Law Enforcement and Criminal Justice Activities

APA specifically requests that the Committee provide:

- \$85 million for the Second Chance Act including \$5 million to support Children of Incarcerated Parents demonstration grants;
- \$25 million for Justice Reinvestment;
- \$94.5 million for Research, Evaluation, and Statistics within the National Institute of Justice.
- \$80 million for Title II funding to states to promote delinquency prevention;
- \$96 million for Title V delinquency prevention funding at the local level; and
- \$30 million for supports for court-involved youth, including behavioral health screening and assessment and alternatives to detention.

APA strongly supports continued efforts in Congress to reform the Federal criminal justice system. Most incarcerated individuals return from jail or prison to their communities; yet, an estimated 77 percent of former prisoners are rearrested within 5 years of release. This represents a systemic failure that Congress has taken initial steps to address by enacting the First Step Act. fiscal year 2020 appropriations for DOJ represent another avenue to reduce the burden of crime and incarceration on families and communities. APA urges the Committee to adopt a reform-minded approach in appropriations for the Bureau of Prisons and Office of Justice Programs.

APA also urges the Committee to adequately fund OJP to support state and local justice reforms. Several states have provided leadership in reducing unnecessary incarceration, and OJP can help ensure other states gain the benefits of similar reforms. In addition, APA asks the Committee to provide strong funding for juvenile justice programming to support intervention in the lives of young people while the chances are highest for a healthy and productive developmental trajectory.

Address Mental Illness and Reduce Strain on Criminal Justice Systems

APA urges the Committee to provide:

- An additional \$9.7 million for mental health staff at the Federal Bureau of Prisons;

- \$20 million for changes to restrictive housing intended to provide better alternatives, such as the model Secure Mental Health Step-Down Program, for individuals with mental illness.
- \$31 million for the Justice and Mental Health Collaboration Program
- \$145 million to support the Comprehensive Opioid Abuse Program (COAP).
- \$7.5 million for the national center to train law enforcement on responses to individuals with mental illnesses or developmental disabilities;
- \$2 million for the Missing Americans Alert Program as authorized under Kevin and Avonte’s Law, Division Q of Public Law 115–141; and
- \$2 million to fund the Law Enforcement Mental Health and Wellness Act.

People with mental illness are overrepresented in the criminal justice system. APA strongly supports diversion from deeper levels of justice system involvement, when public safety allows, so that individuals with mental illness can obtain the care they need. Additionally, APA strongly encourages Congress to direct the Bureau of Justice Statistics to improve data collection on people with mental illness and substance use disorders in criminal justice systems, since currently available data is extremely outdated.

To support important State and local government efforts across the Nation in addressing the high rate of mental and behavioral health needs among youth and adults in contact with criminal justice systems, APA also supports level funding for Drug Courts, Veterans Treatment Courts, and Residential Substance Abuse Treatment for State Prisoners.

APA encourages the use of COAP funds to increase peer-to-peer support, create law enforcement partnerships with public health, behavioral health, and other social services, for the development of tools to support MAT and cognitive behavioral treatment in confinement, and to support the transition to community-based services upon release.

Support Victims of Violence

To support the Office of Violence Against Women, APA requests:

- \$9 million for Protections and Services for Disabled Victims;
- \$9 million for the Elder Abuse Grant Program;
- \$5 million for Grants to Tribal Governments; \$2 million for Outreach to Underserved Populations;
- \$20 million for Grants to Combat Violent Crimes on College Campuses; and \$222 million for STOP Grants.

The Violence Against Women Act (VAWA), which authorizes the OVW, is the Federal framework for the U.S. response to domestic and sexual violence. APA urges the Committee to consider the needs of underserved and marginalized populations. Racial and ethnic minorities, women with disabilities, individuals who identify as lesbian, gay, bisexual, or transgender, and other marginalized populations are at higher risk of victimization from domestic violence, dating violence, and sexual violence. APA asks the Committee to prioritize effective prevention and support around domestic and sexual violence for these populations. These programs are crucial in preventing further violence, helping victims find safety and support, and starting them on the path towards recovery.

Support Improved Police-Community Relations

APA urges the Committee to continue funding the Office of Community Oriented Policing Services to support Federal, state, and local activities, by providing:

- \$10 million for the Community Policing Development Program;
- \$10 million for the Collaborative Reform Initiative; and
- \$5 million for the Innovations in Community Based Crime Reduction Program.

Psychological research has revealed effective strategies to enhance law enforcement and community relations, improve public safety, and reduce the risks of violence and aggression. These include the development of community-informed responses to violence, implementation of community-based policing implemented in a way that builds trust between police and the communities they serve, training on stereotypes and the effects of implicit bias, and programs that support the mental health and well-being of officers.

[This statement was submitted by Amalia Corby, Senior Legislative and Federal Affairs Officer.]

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR ENGINEERING EDUCATION
 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) in fiscal year 2019 and asks you to robustly fund the agency in fiscal year 2020, including the Research and Related Activities and the Education and Human Resources accounts. ASEE joins the academic and scientific community in requesting support of at least \$9 billion for NSF in fiscal year 2020 to help alleviate impacts of historical underinvestment at NSF and advance both core research and education activities and NSF's Big Ideas for Future Investment. Additionally, ASEE supports continuation of funding at the National Aeronautics and Space Administration (NASA) dedicated to the Space Technology Mission Directorate (STMD), which supports engineers and scientists in developing technology to advance science and space missions in the national interest, and the Office of STEM Engagement, which supports and coordinates NASA educational efforts in engineering and STEM.

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. The U.S. college-educated engineering workforce numbered 1.7 million people in 2015,¹ the most jobs of any STEM discipline, and the demand for engineering professionals continues to grow. 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. National Science Foundation (NSF) basic research, conducted in engineering schools and colleges around the country, catalyzes new industries and revolutionary advances. A workforce of well-trained engineers in industry and government takes those discoveries and develops innovative new technologies to improve our future. This system is essential to growth and innovation across our economy, and is helping to solve challenges in health, energy, and national security. NSF is an essential partner, funding basic engineering and engineering education research at universities and supporting students to enable access to engineering education.

ASEE would like to commend you for your commitment to funding NSF and for providing critical increases in fiscal years 2018 and 2019. Prior to these funding boosts, NSF received flat funding for several years, challenging the agency's ability to spur innovative discoveries and research, particularly as the buying power decreased. Due to budget limitations, NSF rejected about \$3.92 billion in cutting edge research proposals rated "very good or higher" according to the agency's merit criteria in fiscal year 2017. Tremendous amounts of additional research and development could be undertaken, leading to novel and transformative discoveries, if more funding were available. Increasing NSF funding would help the U.S. stay the global innovation leader, as other countries have been accelerating research funding. The National Science Board predicted that in 2018 China surpassed U.S. investments in research and development. ASEE is also concerned that the shutdown significantly set back NSF research and education efforts. Increased support is needed for the agency to catch up on crucial initiatives put on hold.

ASEE joins the research and higher education community in requesting that the Committee fund NSF at \$9 billion in fiscal year 2020 to continue the momentum from increased funding in fiscal year 2019 to drive advances in research and education and ensure the U.S. retains global competitiveness and scientific leadership.

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 36 percent of engineering and 85 percent of computer science academic

¹National Science Board. 2018. Science and Engineering Indicators 2018. NSB-2018-1. Alexandria, VA: National Science Foundation.

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 and that domestic students are attracted to careers in engineering and engineering technology.

ASEE strongly supports NSF's *Big Ideas for Future Investment* that dramatically propel engineering research and education forward while revolutionizing the human-technology frontier, medicine, quantum communications, and other areas. We urge continued investment in INCLUDES² to move the needle nationally on broadening participation. NSF needs additional investment to adequately pursue these exciting, new interdisciplinary and transformative ideas while investing in core research activities that power our research ecosystem. These core programs have stagnated for several years, threatening research innovation.

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. Our national security ecosystem depends on healthy NSF research and workforce support.

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 and 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, artificial intelligence, among other areas. These investments are critical as we move into a world even more reliant on human-technology interactions.

ASEE strongly supports NSF Education and Human Resources (EHR) funding to foster inclusive and effective learning and learning environments, though growth to this crucial NSF directorate has been neglected for several years. 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), which is critical for preparing professional engineers and enhancing engineering educational experiences to broaden participation and retention in engineering and engineering technology programs, and Innovations in Graduate Education (IGE) to revolutionize graduate studies to best prepare students for STEM careers.

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.

²Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ASEE is concerned with the Administration's proposal to consolidate the Space Technology Mission Directorate (STMD) of the National Aeronautics and Space Administration (NASA) and redirect its activities solely towards human exploration. 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. 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 urges the Committee to block the administration's proposal and protect STMD's ability to focus on a broad array of NASA technology challenges, continue its engagement with the academic and private sectors, and keep its long-term focus beyond specific near-term mission goals. ASEE joins the research community in requesting \$973 million for STMD in fiscal year 2020.

ASEE is also concerned with the administration's proposed elimination of NASA's Office of STEM Engagement, renamed from the NASA Office of Education, and asks that the Committee sustain funding for this office in fiscal year 2020 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 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 \$9 billion to support critical education and research programs. In addition, we urge you to continue both the STMD and the Office of STEM Engagement at NASA in fiscal year 2020. Thank you for the opportunity to submit this testimony.

[This statement was submitted by Stephanie Farrell, President, and Norman Fortenberry, Executive Director.]

PREPARED STATEMENT OF THE ANIMAL WELFARE INSTITUTE

Thank you for the opportunity to submit testimony on fiscal year 2020 funding priorities for the U.S. Department of Commerce (DOC), and the U.S. Department of Justice (DOJ).

DEPARTMENT OF COMMERCE

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 the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (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 death or injury to marine mammals. Over the past 18 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, ro-

bust funding is required for the Prescott Grant Program to enable it to continue its vital work.

ESA and MMPA Permitting Capacity: \$2.5 million

The NOAA fiscal year 2020 budget proposes to reduce the funding allocated to these efforts by \$2.599 million. As the agency acknowledges, this will decrease the resources available to NMFS' consultation and permitting capacity, which supports requirements under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). This comes at the same time that the agency is projecting an improved response for ESA Section 7 consultations, from 50 days in fiscal year 2019 to 47 days in fiscal year 2020. It is hard to see how that reduction in time can be accomplished with reduced resources.

North Atlantic Right Whale-Related Research and Development: \$5 million

With as few as 420 remaining right whales, NMFS' priority to "investigate and develop measures to mitigate threats to the recovery of North Atlantic right whales" deserves our full support.¹ However, the administration's fiscal year 2020 budget request eliminating the \$1 million appropriated in fiscal year 2019 for right whale research and development directly contradicts and undermines that priority.

The greatest threats to the survival of right whales are fishing gear entanglements and vessel strikes. 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. Ships also collide with right whales, causing deaths or serious injuries, such as blunt force trauma, propeller cuts, and broken bones. With this in mind, we respectfully request that you appropriate \$5 million to NMFS for North Atlantic right whale-related research and development for fiscal year 20 in order to facilitate effective and immediate conservation action.

Unusual Mortality Event Fund: \$4 million

Marine mammals are important indicator species of ocean health. Monitoring the health of marine mammals, especially during an Unusual Mortality Event (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." NMFS currently oversees nine active UMEs (Northeast pinnipeds, Southwest Florida bottlenose dolphins, Atlantic minke whales, North Atlantic right whales, Atlantic humpback whales, Guadalupe fur seals, Florida manatees, California sea lions, and Texas bottlenose dolphins). Although Congress created this fund in 1992, it allocated monies to the fund only in 2005; any funding for UMEs has been through voluntary contributions. In light of the growing number of UMEs, we request an appropriation in the amount of \$4 million.

Alaska Marine Mammal Observer Program (AMMOP): \$4 million

Mandated by the MMPA, NMFS must measure and report the effects of commercial fisheries on marine mammal stocks. One way in which NMFS complies with this law is through the Observer program. These programs provide vital independent third-party data; the NMFS website states, "NOAA Fisheries has determined that observer programs are the best means of obtaining accurate and objective data for determining rates of marine mammal takes in fisheries."²

Alaska produces more than half of the fish caught in waters off the coast of the United States; it is therefore troubling that NMFS is not operating the AMMOP "due to a lack of available resources to fund additional observations of the southeast Alaska salmon drift gillnet fishery."³ To remedy this shortfall in funding, and to restore the essential operations of AMMOP, we ask for \$4 million to the program, the same amount the Administration requests for the North Pacific Fishery Observer Fund for fiscal year 2020.

¹U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (2019). NOAA Fisheries Priorities and Annual Guidance 2019. Retrieved from <https://www.fisheries.noaa.gov/resource/document/noaa-fisheries-priorities-and-annual-guidance-2019>.

²U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. Alaska Marine Mammal Observer Program. Retrieved from <https://www.fisheries.noaa.gov/alaska/fisheries-observers/alaska-marine-mammal-observer-program>.

³U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. Alaska Marine Mammal Observer Program. Retrieved from <https://www.fisheries.noaa.gov/alaska/fisheries-observers/alaska-marine-mammal-observer-program>.

Seafood Import Monitoring Program (SIMP): \$3 million

It is promising to note that for fiscal year 20, the Administration has added nine new positions to the SIMP program and requested \$1.593 million in funds, an increase from the \$1.2 million in fiscal year 2019 that was used for SIMP program implementation. Given the scope and difficulty of tracking fraud; preventing illegal, unreported, and unregulated (IUU) fishing; and keeping the resulting seafood products from entering U.S. commerce, additional funding is essential. 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. Though the administration's proposal is a welcome start, we request an increase to \$3 million in order to ensure full enforcement of SIMP.

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 for 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.

Unwisely, the administration seeks to eliminate the Commission. Not only do we strongly oppose such a move, but we also recommend increasing MMC funding. Since fiscal year 2015, the MMC has been funded at a flat level of \$3.43 million—this level of funding translates to about one penny per American per year. However, since that time, the MMC has absorbed significant fixed costs, leading to reduced discretionary funding for its core functions by roughly 53 percent (\$1.82 million). In order to restore the Commission to the discretionary funding level it had in fiscal year 2015, \$5.25 million is needed. This level of funding will better enable the MMC to fulfill its significant obligations as outlined in the MMPA.

Cooperative Enforcement Program: \$18.279 million

The NOAA Fisheries Cooperative Enforcement Program is aimed at increasing living marine resource conservation, endangered species protection, and critical habitat enforcement. The program is based on Cooperative Enforcement Agreements, which authorize State and U.S. territorial marine conservation law enforcement officers to enforce Federal laws and regulations, and on Joint Enforcement Agreements (JEAs), which include transfers of funds to State and U.S. territorial law enforcement agencies to perform law enforcement services in support of Federal regulations such as the ESA, MMPA, the Magnuson-Stevens Fisheries Conservation and Management Act, and the Lacey Act. The fiscal year 2020 budget proposes to eliminate \$18.279 million in funding for this program. As a result, NOAA will be unable to implement JEAs for 27 States and U.S. territories, significantly hampering law enforcement efforts. Given the importance of this enforcement work, we request maintaining this funding.

Galveston Sea Turtle Facility

In the summer of 2018, NOAA announced that the Galveston Sea Turtle Facility would close due to "budget constraints." This facility does life-saving work by rescuing and rehabilitating threatened and endangered sea turtles, and it is also the only facility in the U.S. with a sea turtle captive rearing program that allows for testing of Turtle Excluder Devices (TEDs) for fishing nets, primarily shrimp trawlers. TEDs are metal grates inserted into shrimp nets that allow sea turtles and other ocean wildlife to escape. TEDs are a simple solution to ensure target fish and shrimp species are more effectively and sustainably caught by preventing larger marine species from accidentally getting ensnared and dying. Using TEDs benefits sea turtles, fishermen, and the general public—these devices have the potential to save thousands of sea turtles and other ecologically and economically important marine species, reduce millions of pounds of wasted seafood, open new markets to U.S. shrimpers, boost nature-based tourism, and leave more fish in the sea for other fishermen. For example, in 2013, the Gulf of Mexico shrimp trawl fishery discarded over 242 million pounds of fish—including species popular with recreational anglers, like red snapper, red and black drum, and Spanish and King mackerel. This wasted seafood equated to over \$357 million in value for commercial fisheries. The Galveston

facility requires only \$600–800K/year to stay operational, a mere fraction of NOAA's over-\$3 billion annual budget.

Requested Report Language: The Committee directs the National Marine Fisheries Service to continue scientifically advisable operations of and full funding for ongoing work on endangered and threatened sea turtle conservation, including captive sea turtle rearing and Turtle Excluder Device research and certification to reduce sea turtle bycatch. The agency has committed to Congress that it would continue its sea turtle stranding and rehabilitation programs until it found suitable non-governmental partners to take over that program in full. NMFS is therefore directed to maintain adequate capacity of the sea turtle stranding and rehabilitation program until it can assure Congress that those critical activities have been fully transferred to partner organizations.

DEPARTMENT OF JUSTICE

Protecting Animals With Shelter (PAWS)

Violence in the home can be directed at companion animals as well as at the human members of the household. Abusers threaten, harm, and even kill pets to frighten and control their victims. Few domestic violence survivors have access to shelters that can protect them and their pets; in fact, large numbers delay their escape out of fear for the safety of the pets left behind. Congress has wisely sought to address this shortage of resources. Section 12502 of Public Law 115–334, the Agriculture Improvement Act of 2018, authorizes a grant program to provide emergency and transitional shelter and housing options for domestic violence survivors with companion animals. It is urgent that Congress now appropriate the authorized funding and direct the agencies involved to take all necessary steps to implement the program. For that reason, we ask the subcommittee to include the following directive to the Department of Justice:

Requested Bill Language: The Committee urges the Attorney General to enter into consultations with the Secretary of Agriculture as soon as possible, and enter into any memoranda of understanding as directed, in order to establish during fiscal year 2020 the requirements for grant application and execution under Section 12502 of Public Law 115–334, the Agriculture Improvement Act of 2018, to provide emergency and transitional shelter and housing options for domestic violence survivors with companion animals.

[This statement was submitted by Nancy Blaney, Director, Government Affairs.]

PREPARED STATEMENT OF THE ANTARCTIC AND SOUTHERN OCEAN COALITION

I. INTRODUCTION

Thank you for including this statement in the hearing record for the fiscal year 2020 budget for the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). This statement is in support of continued funding for the Antarctic Ecosystem Research Division (AERD), which implements the Antarctic Marine Living Resources (AMLR) Program of NOAA.

I am providing this testimony on behalf of the Antarctic and Southern Ocean Coalition (ASOC), which represents non-governmental organizations interested in the protection of Antarctica and its surrounding ocean, including the World Wide Fund for Nature (WWF), Greenpeace, The Pew Charitable Trusts, and others.

The fiscal year 2020 Presidential budget request zeroes out the funding for NOAA's Antarctic Ecosystem Research Program, which implements the Antarctic Marine Living Resources (AMLR) Program. This would cause the United States to lose influence and scientific credibility in the Antarctic governance system. Congress has supported this funding for decades to fulfill obligations under an international treaty as well as under domestic legislation. ASOC and its member organizations strongly encourage Congress to protect AMLR funding.

The AMLR program has a strong track record of scientific excellence and has always enjoyed bipartisan congressional support. Since its inception in 1986, Congress has ensured funding for AMLR, supporting its staff and scientists producing vital Southern Ocean research. We urge the Senate Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies to protect this funding.

II. THE ANTARCTIC MARINE LIVING RESOURCES PROGRAM (AMLR PROGRAM)

The NOAA Antarctic Ecosystem Research Division AMLR program is a vital program fulfilling NOAA's requirement of providing scientific advice that supports the United States' interests in the Southern Ocean.

Realizing the importance of Antarctica to the American public, Congress signed the U.S. Antarctic Marine Living Resources (AMLR) Convention Act of 1984. This Act directed NOAA to implement a research program to support and facilitate implementation of an international treaty, the Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention), of which the United States is a signatory. The program that was subsequently created is known as the United States AMLR Program. The AMLR program has been implemented by NOAA's National Marine Fisheries Service (NMFS) since 1987. Today, the program is implemented by the Antarctic Ecosystem Research Division (AERD). Research results are submitted to the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR), the body charged with implementing the CAMLR Convention.

With a small budget and staff, AMLR provides a significant contribution to the science-based discussions and decisionmaking of CCAMLR. A recent comprehensive analysis of the outputs of national Antarctic research programs found that the United States was by far the most productive in terms of research publication records.¹ Within that, the AMLR Program has contributed to over 30 peer-reviewed publications since 2018. In addition, with only 12 staff, AMLR submitted 20 papers to the CCAMLR Scientific Committee and its working groups in 2018, compared to 27 papers submitted by the more than 25 staff of the British Antarctic Survey.

The AMLR Program was the first national research program to investigate the State of Southern Ocean fish stocks. The first AMLR research cruise confirmed that fishing operations were having adverse impacts on marine life, and that several fish stocks were being exploited at rates above those levels which allow replacement of the stock. Several species had been so heavily fished that their populations were less than 10 percent of their original size. This work enabled CCAMLR to take swift action to prevent further overfishing.

Another vital contribution to CCAMLR from the AMLR Program is their long-term monitoring program examining changes to the Southern Ocean ecosystem over several decades. Long-term data sets such as these are critical for understanding how ecosystems respond to global environmental changes and human pressures over time, with implications for global climate systems, industrial fishing, tourism, and geopolitics. Eliminating funding for the AMLR program would end this data collection, disrupting over 20 years of work and ending research that international teams of scientists and managers rely on.

The United States is seen as an international leader within CCAMLR. The United States' scientific delegation to CCAMLR is led by AMLR Program staff who submit their research results to the CCAMLR process. The United States is a strong voice for the adoption of Antarctic fisheries management measures that ensure the precautionary protection of Southern Ocean food webs.

The AMLR Program was instrumental in the process of designating the Ross Sea Marine Protected Area (MPA), the largest MPA in the world and an important international conservation legacy for the United States. With counterparts from New Zealand, scientists within the AMLR Program developed the science underpinning the Ross Sea MPA, and they are leading the Ross Sea MPA research and monitoring program to ensure that the MPA continues to meet its conservation objectives.

Key research topics for the AMLR Program are highlighted below:

Antarctic krill form the basis of the Antarctic food web and provide a critical carbon sink in the Southern Ocean. The AMLR Program conducts annual studies to estimate krill population dynamics. The international research community relies on these surveys to monitor the effects of the krill fishery, link these effects to changes in predator populations, and understand climate change.

Stock assessments estimate the status of Antarctic species subject to fishing. AMLR scientists participate with other CCAMLR Member nation scientists to review fisheries issues in the Southern Ocean and develop new assessment frameworks and models that are used to establish catch limits.

Climate change research helps to establish an understanding of how species and ecosystems are responding to climate change in the Antarctic. Long-term research done by the AMLR Program is extremely valuable in analyzing trends over time. The research also contributes to a better understanding of global climate systems and warming impacts.

¹ Andrew D. Gray & Kevin A. Hughes (2016) Demonstration of "substantial research activity" to acquire consultative status under the Antarctic Treaty, *Polar Research*, 35:1, 34061, DOI: 10.3402/polar.v35.34061.

Penguins are important indicators of ecosystem health. AMLR researchers have monitored aspects of the breeding biology and foraging ecology of Adélie, gentoo and chinstrap penguin populations since 1977, and use this data to monitor and predict changes to the krill resources and inform CCAMLR fisheries decisionmaking.

III. FISCAL YEAR 2020 APPROPRIATIONS REQUEST

Antarctica's ecosystems have long remained healthy due in large part to the United States' commitment to conducting research in support of its obligations. The fiscal year 2020 Appropriations Request would eliminate the entire \$2.9M budget for the AMLR Program. This would have several consequences for the position of the United States in CCAMLR, including a loss of scientific credibility and the ability to influence management decisions. Removing funding for AMLR's groundbreaking research would be catastrophic for the international community that relies on this research, and have an impact on CCAMLR's ability to implement science-based management decisions. Moreover, other countries such as China are increasing their investment in Antarctic research and their presence within CCAMLR; by ending the AMLR Program, United States' influence in the region would be diminished.

The United States is a world leader in polar governance, and the Antarctic is often seen as a potential model for future Arctic governance solutions. As the global community comes together to debate international environmental governance, diminishing the influence and participation of the United States in these conversations would be shortsighted. The AMLR Program has been supported by Congress for decades as a cost-effective means of fulfilling international treaty obligations. Protecting this funding would demonstrate that the United States intends to continue playing an active role in the governance of the Antarctic region.

IV. CCAMLR BACKGROUND AND HISTORY

The United States was one of the initial signatories to the landmark Antarctic Treaty in 1959. The Antarctic Treaty declared the Antarctic continent a place of peace and science, providing space for international scientific cooperation at the height of the Cold War. Subsequently, Antarctic Treaty Parties ratified the Convention on the Conservation of Antarctic Marine Living Resources (CAMLRL Convention) in 1980 to create a governance regime in the Southern Ocean. The Convention created an international organization, the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR meets annually to determine appropriate management rules to ensure the protection of Southern Ocean ecosystems.

CCAMLR is widely recognized as a leader in high seas governance and is seen as a model for other international organizations. The CAMLR Convention requires that any fishing that occurs in its jurisdictional waters must meet several conservation principles which ensure the long-term health of the fished population and its ecosystems. To do so requires a precautionary, ecosystem-based approach to fisheries management that is supported by robust science. In recent years, CCAMLR has committed to developing a system of marine protected areas (MPAs) in the Southern Ocean to give further protections to the region's biodiversity. The Ross Sea MPA, supported by the United States, was created by CCAMLR in 2016 and is the world's largest high-seas MPA.

The United States has been a leader in Antarctic and Southern Ocean governance since its inception. It played a key role in the drafting of the CAMLR Convention, and has been an active Member of CCAMLR for almost four decades. From overseeing implementation of the Convention, to cracking down on illegal, unreported and unregulated (IUU) fishing, to conducting relevant scientific research, the United States is a key player in ensuring CCAMLR's success.

[This statement was submitted by Claire Christian, Executive Director.]

PREPARED STATEMENT OF THE ASSOCIATION OF SCIENCE-TECHNOLOGY CENTERS, AMERICAN ALLIANCE OF MUSEUMS, ASSOCIATION OF CHILDREN'S MUSEUMS, AND ASSOCIATION OF SCIENCE MUSEUM DIRECTORS

REGARDING

Federal Science Funding and the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA)

Chairman Moran, Ranking Member Shaheen, and Members of the Subcommittee:

Thank you for accepting this statement submitted by the Association of Science-Technology Centers (ASTC), the American Alliance of Museums (AAM), the Association of Children’s Museums (ACM), and the Association of Science Museum Directors (ASMD). We are Cristin Dorgelo, President and CEO of ASTC; Laura L. Lott, President and CEO of AAM; Laura Huerta Migus, Executive Director of ACM; and Bonnie Styles, Executive Director of ASMD.

We appreciate the opportunity to present the views of our associations to the subcommittee for its consideration as it prepares to write the fiscal year 2020 Commerce, Justice, Science, and Related Agencies Appropriations bill, particularly regarding the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA).

Our associations represent more than 5,000 member organizations in every State and district in America, including science centers and museums, nature centers, aquariums, zoos, planetariums, botanical gardens, and natural history and children’s museums, as well as companies, consultants, and other organizations that share an interest in science education and public engagement in science.

Taken together, our national reach is a vital resource for fostering rich public engagement in the importance of science and many other subjects and disciplines towards building a bright future and opportunity for all.

Our place-based organizations are leading institutions in the efforts to promote education in science, technology, engineering, and mathematics (STEM), developing rich, innovative, and effective science-learning experiences. We are helping to create the future STEM workforce and inspiring people of all ages about the wonders and the meaning of science in their lives. And our members are trusted and valued by their communities—a recent national public opinion poll, showed that 95 percent of voters would approve of lawmakers who acted to support museums and 96 percent of voters want Federal funding for museums to be maintained or increased (*Museums and Public Opinion*, Wilkening, S. and AAM, 2018).

In the past, we have testified on behalf of the specific funding numbers for programs under this subcommittee’s jurisdiction. But today we also want to commend this subcommittee through a look at the bigger picture—the overall science budget of the U.S. Federal Government.

As you are well aware, for the past 2 years the administration proposed significant cuts to the budgets of a number of domestic agencies. Included in the list of impacted programs were a number of science agencies and science programs. Similar cuts have been proposed in the administration’s fiscal year 2020 budget.

We want to thank you for not allowing the cuts to move forward. We urge you to reject them in the fiscal year 2020 budget as well. Of course, the first hurdle to cross to fully fund all the programs is to raise or repeal the budget caps. To do otherwise will result in devastating impacts to America’s scientific enterprise and force you to forego critical investments in our students at a time when we must equip all Americans with the skills they need to thrive in the future workforce.

Taken together, the investments being made by the U.S. Federal Government in science and research is larger than ever. On behalf of the all the members of ASTC, AAM, ACM, and ASMD—and the communities they serve—we want to say thank you, with gratitude for a job well done.

Our associations and the member organizations we represent in America’s communities were active and vocal supporters of a robust budget for science and for STEM education budget last year. Many of our institutions hosted science days, participated in community celebrations of science, and reached out to their elected representatives to make the case for the importance of science and STEM education. This year and into the future, our associations will all continue to advocate for robust research, STEM education, and science engagement funding at every opportunity.

In December 2018, a new 5-year Federal Education Strategic Plan was published by the interagency National Science and Technology Council’s Committee on STEM Education. The new plan reflects a vital roadmap for public-private cooperation to advance STEM education, and we encourage the subcommittee to fund programs that support our museum members in making further progress towards the plan’s aspirational goals, which include:

- Building strong foundations for STEM literacy by ensuring that every American has the opportunity to master basic STEM concepts, including computational thinking, and to become digitally literate.
- Increasing diversity, equity, and inclusion in STEM and providing all Americans with lifelong access to high-quality STEM education, especially those historically underserved and underrepresented in STEM fields and employment.

—Preparing the STEM workforce for the future by creating authentic learning experiences that encourage and prepare learners to pursue STEM careers.

School-aged youth spend 80 percent of their time outside of the classroom. Research has consistently shown that learning experiences outside of the formal classroom are vitally important to youth's future interest and capacity in STEM (National Research Council, 2006, 2009, 2015).

Every day, our science centers, museums, zoos, and aquariums open their doors for students and the public. Every day, throughout the United States, they reach out to students of underserved populations in both urban and rural areas, so that quality STEM education can be accessed by every American student. Every day, they welcome girls and youth from backgrounds historically underrepresented in STEM fields, providing positive examples and experiential learning opportunities so that these youth know there is a place for them in the scientific community.

Every day, our museums provide educational experiences with science, technology, and other subjects in interesting, innovative, and effective ways—including through transdisciplinary approaches that connect youth with how science, technology, engineering, and math relate to community issues and real-world problem solving. Every day, staff at our museums train teachers on effective science teaching practices and develop curriculum aligned with Next Generation Science Standards in partnership with local schools. Every day, they open their doors and reach out to every student in their communities, to ensure that our Nation has the trained STEM workforce we will need for the future.

With continued congressional support for programs that support informal STEM education, afterschool, out-of-school, and summer learning, and public engagement in science programs, you will make our efforts more effective.

Turning to specifics, we strongly urge the subcommittee to provide \$9 billion for the National Science Foundation and these specific levels of support for programs within the agency:

- \$910 million for the Directorate for Education and Human Resources (EHR)
- \$62.5 million for Advanced Informal STEM Learning (AISL)
- \$51.9 million for Science, Technology, Engineering, and Mathematics + Computing Partnerships (STEM+C)

In addition to the specific NSF programs mentioned above, we urge the subcommittee to provide funding for the NSF Directorates for Biological Sciences; Education and Human Resources; Geosciences; and Social, Behavioral and Economic Sciences to continue to support museum research, collections, and programs that are key to lifelong STEM education.

We also recommend the subcommittee fully fund museums to participate in informal STEM education and science engagement programs across Federal science mission agencies, specifically at the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA).

For programs within NASA, we recommend the subcommittee provide:

- \$115 million for NASA's STEM Engagement programs
- At least \$15 million for the Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers (CP4SMPVC) within the STEM Education and Accountability Projects

Within the budget for NOAA, we recommend the subcommittee maintain the total budget for the Office of Education at \$28 million.

In short, we strongly urge you to again reject the administration's proposals to cut these programs and to maintain funding levels in fiscal year 2020 in a new, bipartisan budget deal that raises the spending caps and supports American innovation through critical investments in science, advancing science education, and public engagement in science.

We continue to thank this subcommittee for all its support of a robust science budget. You have demonstrated your support for crucial programs that promote STEM education for our Nation's students. Like our organizations, you recognize these are vital investments in our future, and we thank you in advance for taking action accordingly.

[This statement was submitted by Cristin Dorgelo, President and CEO, Association of Science-Technology Centers, Laura L. Lott, President and CEO, American Alliance of Museums, Laura Huerta Migus, Executive Director, Association of Children's Museums, and Bonnie Styles, Executive Director, Association of Science Museum Directors.]

PREPARED STATEMENT OF THE ASSOCIATION OF ZOOS AND AQUARIUMS

NOAA/MARINE MAMMAL COMMISSION

On behalf of the facilities accredited by the Association of Zoos & Aquariums (AZA), a non-profit organization dedicated to the advancement of accredited zoos, aquariums, science centers, and nature centers in the areas of conservation, education, science, and recreation, I am writing to express my strong support for several programs in fiscal year 2020. Specifically, I respectfully request that you include at least \$8,000,000 for NOAA's Environmental Literacy Grants Program; \$12,000,000 for the Bay, Watershed, Education and Training (BWET) Program; \$4,000,000 for the John H. Prescott Marine Mammal Rescue Assistance Grant Program; \$10,000,000 for the Marine Debris Program; \$93,500,000 for the National Sea Grant College Program; and, \$5,250,000 for the Marine Mammal Commission in the fiscal year 2020 Commerce, Justice, Science, and Related Agencies appropriations bills.

The NOAA Environmental Literacy Grants and BWET programs bring students closer to science by providing them with the opportunity to learn firsthand about our world's marine resources. Through these grant programs, aquariums and zoos work closely with Federal, State, and local partners on projects with long-lasting benefits not only for the students but their communities as well. Previous projects funded by these programs at AZA aquariums have focused on establishing a regional network of summer camp programs grounded in ocean science, enhancing teen conservation leadership programs, and conserving and managing coastal and marine resources to meet our Nation's economic, social and environmental needs. As schools face increased budgetary pressures, these types of education programs will become even more important in assuring that schoolchildren receive the necessary foundation in science education that they will need to be competitive in the 21st century global economy.

Education programs at AZA-accredited facilities provide essential learning opportunities, particularly about science, for schoolchildren in formal and informal settings. AZA-accredited zoos and aquariums educate more than 12 million students about wild animals, their habitats, and the ways in which the public can contribute to their conservation. Over the past 10 years, AZA-accredited facilities also have trained more than 400,000 teachers, ensuring that aquarium and zoo field trips or in-class education programs support science curricula at the state and local levels. Without programs like the NOAA Environmental Literacy Grants Program, the BWET Program, and others, opportunities for engaging schoolchildren to learn about science will be lost and the ability of accredited zoos and aquariums to partner with Federal agencies on education initiatives will be severely limited.

Prescott grants provide critical resources to stranding network participants, many of which are AZA-accredited aquariums, for the recovery and treatment of stranded marine mammals and turtles. These are the only Federal funds that aquariums receive to help offset the cost of saving and rehabilitating thousands of stranded animals. Moreover, the data that aquariums collect from stranded animals is very important not only as indicators of ocean health, but also in identifying emerging zoonotic diseases and harmful algal blooms that can impact commercially valuable species and human health.

AZA-accredited aquariums and other institutions work hard to leverage Federal resources to save and rehabilitate stranded animals in every part of the Nation's coastline. Programs utilize the services of thousands of volunteers who donate their time to help save stranded and entangled marine mammals and collect key data. However, aquariums need resources to fund the equipment, personnel and operating cost to run these extensive and expensive stranding programs, and Federal funds provide a small, but critical, piece of overall funding. Without those funds, many aquariums and other institutions are unable to operate their stranding programs.

AZA-accredited facilities work with Federal, State, and local partners to address the marine debris accumulating in the ocean and in rivers, lakes, and streams across the country. Recent studies estimate that at least eight million metric tons of plastic are dumped into the world's oceans each year. This pollution affects the availability of clean water for humans, harms the species living in these vital bodies of water, and has an impact on the economy and local communities. The NOAA Marine Debris Program offers several nationwide, competitive funding opportunities for marine debris projects including removal grants, education and outreach grants, and research grants. With the amount of marine debris expected to significantly increase over the next decade, these grants are critical to cleaning up the existing trash as well as educating citizens about how to address this global problem.

The National Sea Grant College Program funds initiatives that are supported by AZA-accredited facilities including conservation of coastal, ocean, and Great Lake areas and promotion of long-term stewardship and responsible use of those aquatic resources. The thirty-three state Sea Grant programs, located in every coastal and Great Lakes state, collaborate with AZA-accredited zoos and aquariums on a variety of projects including aquaculture research, STEM education, and environmental hazards. This valuable program also funds essential government fellowships for qualified individuals who want to help legislators and Federal agencies shape policies affecting coastal, Great Lake, and ocean areas.

As mandated by the Marine Mammal Protection Act (MMPA), the Commission's mission is to advance the conservation of marine mammals and their environment. Its activities include providing independent, science-based oversight of domestic and international policies and the actions of Federal agencies addressing the human impact on marine mammals and their ecosystems, producing reports for policymakers, coordinating essential research initiatives, and assisting Alaska Natives pursue their traditional rights under the MMPA. AZA-accredited facilities play a critical role in marine mammal conservation through broad-based public education and outreach activities, cutting-edge research projects, and advocacy for marine protected areas and other strong policies to protect our oceans. The work of the Marine Mammal Commission is critical to these efforts.

As you determine priorities for the fiscal year 2020 Commerce, Justice, Science, and Related Agencies appropriations bills, I strongly encourage you to assure that the NOAA Environmental Literacy Grants Program, BWET Program, John H. Prescott Marine Mammal Rescue Assistance Grant Program, Marine Debris Program, National Sea Grant College Program, and Marine Mammal Commission receive the necessary funding so that AZA-accredited facilities can continue to work with their Federal, state, and local partners to preserve our marine resources and assure that current and future generations will be good stewards of the world's precious aquatic resources.

Thank you.

ADDENDUM

AZA-accredited facilities:

Abilene Zoological Gardens	Cape May County Park Zoo
Adventure Aquarium	Capron Park Zoo
African Safari Wildlife Park	Central Florida Zoological Park
Akron Zoological Park	Central Park Zoo
Alaska SeaLife Center	Chahinkapa Zoo
Albuquerque Biological Park	Charles Paddock Zoo
Alexandria Zoological Park	Chattanooga Zoo at Warner Park
Aquarium of Niagara	Cheyenne Mountain Zoological Park
Aquarium of the Bay	Chicago Zoological Society—Brookfield Zoo
Aquarium of the Pacific	Cincinnati Zoo and Botanical Garden
Arizona Sonora Desert Museum	Cleveland Metroparks Zoo
Audubon Aquarium of the Americas	Clyde Peeling's Reptiland
Audubon Zoo	Columbus Zoo and Aquarium
Bergen County Zoological Park	Como Park Zoo and Conservatory
Binder Park Zoo	Connecticut's Beardsley Zoo
Birch Aquarium at Scripps	Cosley Zoo
Birmingham Zoo	CuriOdyssey
Blank Park Zoo	Dakota Zoo
Boonshoft Museum of Discovery	Dallas World Aquarium
Bramble Park Zoo	Dallas Zoo
Brandywine Zoo	David Traylor Zoo of Emporia
Brevard Zoo	Denver Zoological Gardens
Bronx Zoo/WCS	Detroit Zoological Park
Brookgreen Gardens	Dickerson Park Zoo
Buffalo Zoo	Discovery Cove
Busch Gardens (Tampa)	Disney's Animal Kingdom
The Butterfly House	El Paso Zoo
Butterfly Pavilion	Ellen Trout Zoo
Buttonwood Park Zoo	Elmwood Park Zoo
Cabrillo Marine Aquarium	Erie Zoo
Caldwell Zoo	The Florida Aquarium
California Science Center	Fort Wayne Children's Zoo
Cameron Park Zoo	Fort Worth Zoo

Fossil Rim Wildlife Center
 Franklin Park Zoo
 Fresno Chaffee Zoo
 Georgia Aquarium
 Gladys Porter Zoo
 Great Plains Zoo and Delbridge Museum
 of Natural History
 Greensboro Science Center
 Greenville Zoo
 Grizzly & Wolf Discovery Center
 Happy Hollow Zoo
 Henry Vilas Zoo
 Houston Zoo, Inc.
 Hutchinson Zoo
 Idaho Falls Zoo at Tautphaus Park
 Indianapolis Zoological Society, Inc.
 International Crane Foundation
 Jacksonville Zoo and Gardens
 Jenkinson's Aquarium
 John Ball Zoological Gardens
 John G. Shedd Aquarium
 Kansas City Zoo
 Lake Superior Zoo
 Landry's Downtown Aquarium—Denver
 Landry's Houston Aquarium, Inc.
 Lee G. Simmons Conservation Park &
 Wildlife Safari
 Lee Richardson Zoo
 Lehigh Valley Zoo
 Lincoln Children's Zoo
 Lincoln Park Zoological Gardens
 Lion Country Safari
 Little Rock Zoological Gardens
 Living Desert Zoo & Gardens State Park
 The Living Desert Zoo and Gardens
 Los Angeles Zoo
 Louisville Zoological Garden
 Loveland Living Planet Aquarium
 Maritime Aquarium at Norwalk, Inc.
 Maryland Zoo in Baltimore
 Memphis Zoological Garden and
 Aquarium
 Mesker Park Zoo & Botanic Garden, Inc.
 Miller Park Zoo
 Milwaukee County Zoological Gardens
 Minnesota Zoological Garden
 Monterey Bay Aquarium
 Moody Gardens Rainforest and
 Aquarium
 Mote Marine Laboratory and Aquarium
 Museum of Life and Science
 Museum of Science
 Mystic Aquarium
 Naples Zoo
 Nashville Zoo
 National Aquarium
 National Aviary
 National Mississippi River Museum &
 Aquarium
 New England Aquarium
 New York Aquarium
 Newport Aquarium
 North Carolina Aquarium at Fort Fisher
 North Carolina Aquarium at Pine Knoll
 Shores
 North Carolina Aquarium on Roanoke
 Island
 North Carolina Zoological Park
 Northeastern Wisconsin (NEW) Zoo
 Northwest Trek Wildlife Park
 Oakland Zoo
 OdySea Aquarium
 Oglebay's Good Zoo
 Oklahoma City Zoo and Botanical
 Garden
 Omaha's Henry Doorly Zoo & Aquarium
 Oregon Coast Aquarium
 Oregon Zoo
 Palm Beach Zoo at Dreher Park
 Peoria Zoo
 Philadelphia Zoo
 The Phoenix Zoo
 Point Defiance Zoo and Aquarium
 Potawatomi Zoo
 Potter Park Zoological Gardens
 Prospect Park Zoo
 Pueblo Zoo
 Queens Zoo
 Racine Zoological Gardens
 Red River Zoo
 Reid Park Zoo
 Ripley's Aquarium at Myrtle Beach
 Ripley's Aquarium of the Smokies
 Riverbanks Zoo and Garden
 Riverside Discovery Center
 Roger Williams Park Zoo
 Rolling Hills Zoo
 Roosevelt Park Zoo
 Rosamond Gifford Zoo at Burnet Park
 Sacramento Zoo
 Safari West
 Saginaw Children's Zoo
 Saint Louis Zoo
 Salisbury Zoological Park
 San Antonio Zoological Society
 San Diego Zoo
 San Diego Zoo Safari Park
 San Francisco Zoological Gardens
 Santa Barbara Zoological Gardens
 Santa Fe College Teaching Zoo
 Scovill Zoo
 SEA LIFE Arizona Aquarium
 SEA LIFE Carlsbad Aquarium
 SEA LIFE Charlotte-Concord Aquarium
 SEA LIFE Grapevine Aquarium
 SEA LIFE Kansas City Aquarium
 SEA LIFE Michigan Aquarium
 SEA LIFE Orlando Aquarium
 The Seas
 Seattle Aquarium
 SeaWorld Orlando
 SeaWorld San Antonio
 SeaWorld San Diego
 Sedgwick County Zoo
 Seneca Park Zoo
 Sequoia Park Zoo
 Shark Reef Aquarium at Mandalay Bay
 Smithsonian National Zoological Park
 South Carolina Aquarium
 Squam Lakes Natural Science Center
 St. Augustine Alligator Farm
 Staten Island Zoo
 Steinhart Aquarium
 Stone Zoo

Sunset Zoological Park	Virginia Living Museum
Tennessee Aquarium	Virginia Zoological Park
Texas State Aquarium	Western North Carolina Nature Center
Toledo Zoological Gardens	Wildlife Safari
Topeka Zoo and Conservation Center	The Wilds
Tracy Aviary	Woodland Park Zoo
Trevor Zoo	Zoo Atlanta
Tulsa Zoo	Zoo Boise
Turtle Back Zoo	Zoo Knoxville
Utah's Hogle Zoo	Zoo Miami
Utica Zoo	ZOOAMERICA NA Wildlife Park
Virginia Aquarium and Marine Science Center	ZooTampa at Lowry Park

[This statement was submitted by Dan Ashe, President and CEO.]

PREPARED STATEMENT OF THE CHOOSE CLEAN WATER COALITION

Dear Chairman Moran and Ranking Member Shaheen:

The undersigned members of the Choose Clean Water Coalition request continued support for programs that are essential to maintaining a healthy and vibrant Chesapeake Bay and a strong regional economy that is dependent on the Bay's resources. The National Oceanic and Atmospheric Administration (NOAA) has a strong and long term presence in the Chesapeake Bay area, and its Chesapeake Bay Office coordinates their efforts with other Federal agencies, State and local partners and users of the resource.

The programs that are run and/or coordinated by NOAA's Chesapeake Bay Office (NCBO) are critical for the Chesapeake Bay ecosystem and for its users and residents. These programs provide the science and management assistance necessary for those whose livelihood is to ply the Bay's waters for fish, crabs and oysters and to the hundreds of thousands of people who fish recreationally in the Bay every year and to the millions who boat, kayak, and/or view wildlife in the region.

NCBO is also critical for others, from students learning about science with hands-on experiences to local governments and residents along the shore to have the latest information to prepare for coastal flooding and hurricane emergencies.

Utilizing sound science in the management of Chesapeake Bay resources is critical for our regional economy. We request the following funding levels in fiscal year 2020:

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration—National Marine Fisheries Service—Habitat Conservation and Restoration—Chesapeake Bay Office (NCBO)—\$9.7 million

Chesapeake Bay Office (NCBO)—\$9.7 million

The NCBO was established by Congress in 1992 to provide resources, technical assistance and coordination through its two branches: the Ecosystem Science and Synthesis Program, which focuses on applied research and monitoring in fisheries and aquatic habitats; synthesis, and analysis to describe and predict Bay ecosystem processes; and technical assistance to Chesapeake Bay decision makers.

The second branch is Environmental Literacy and Partnerships Program, which focuses on the development of K-12 and higher education environmental science education programs; strategic partnerships with the Chesapeake Bay Program and other government, university, and nonprofit partners; and delivering NOAA products, services, and programs to targeted audiences.

The NCBO's programs play a key role in implementing the voluntary Chesapeake Bay Agreement among the States and is critical to ensuring that commitments are met to:

- restore native oyster habitat and populations in 10 tributaries by the year 2025;
- ensure students graduate with the knowledge and skills to protect and restore their local watershed;
- sustain a healthy blue crab and striped bass (rockfish) population;
- maintain a coordinated watershed-wide monitoring and research program; and
- adapt to climate change, including sea level rise and flooding.

The specific breakdown of our request for \$9.7 million for the NCBO is as follows:

Oyster Restoration—\$4 million

The Chesapeake Bay oyster population is less than 1 percent of historic levels and the ecosystem functions associated with oyster reefs, including fish habitat and nitrogen removal, are similarly diminished. NCBO continues to restore entire tributaries with self-sustaining oyster populations and to measure the resulting ecosystem benefits. NCBO works with Federal, State and private partners to plan and implement this tributary-scale restoration in both Maryland and Virginia.

Recent studies by Morgan State University found that the economic multipliers associated with commercial and recreational fishing in three restored tributaries of the Choptank River are currently valued at \$13 million annually for newly restored reefs and \$26 million annually once the restored reefs are allowed to mature. In addition, research conducted in one of these tributaries, Harris Creek, by the University of Maryland Center for Environmental Science and the Virginia Institute of Marine Science found the reefs there are removing nitrogen and phosphorous from the water, providing a service valued at over \$3 million annually. Preliminary research by NOAA has also found correlations between clearer water and increased submerged aquatic vegetation (SAV) growth in areas where large-scale restoration has occurred when compared to similar unrestored areas. Protecting the existing restoration sites will allow these benefits to accrue and new restoration will enhance these benefits in more tributaries.

Funding for oyster restoration in the Chesapeake was also done through the U.S. Army Corps of Engineers, but they have not received funding in a number of years. Funding for this key program has eroded sharply since fiscal year 2010, and without Army Corps funds, NOAA is the only Federal agency left to continue this key restoration program.

Environmental Education and Literacy—\$3.5 million

NCBO encourages and supports efforts in K–12 and higher education to develop and implement comprehensive environmental literacy programs. NCBO runs the nationally recognized Bay Watershed Education and Training Program (B–WET)—a competitive grant program for hands-on watershed education for students and teacher training to foster stewardship of the Chesapeake Bay. B–WETs funding has steadily eroded since 2010 and should be restored to at least that level. This \$3.5 million would be a part of the larger national B–WET funding.

Fisheries Science—\$1 million

Chesapeake fisheries contribute significantly to the economy and culture of the region. In 2018 Maryland harvested just over 33 million pounds of blue crab with a dockside value of more than \$53.7 million. Striped bass (rockfish) remain the most popular commercial and recreational finfish in the Bay, generating roughly \$500 million in economic activity related to fishing expenditures, travel, lodging, and so on each year. NCBO works with top academic institutions to provide science used to sustainably manage commercially and recreationally valuable species. These efforts have been hampered by slowly eroding budgets, leaving NCBO without a single fishery biologist on staff, and this at a time when climate change is altering ecosystem conditions in ways that may impact commercial and recreational species and their prey in unknown ways.

Chesapeake Bay Interpretive Buoy System (CBIBS)—\$1 million

Weather and water conditions on the Chesapeake Bay are constantly changing. It is imperative that monitoring systems are in place to provide high quality data to understand, forecast, and develop decision support applications that aid maritime commerce, safety, and fishing activities. CBIBS is maintained by NCBO and relays near real time weather and water information to the National Weather Service, boaters, pilots, and researchers. This is the only system monitoring wind and waves together in the mainstem of the Bay. In addition, CBIBS plays a crucial role monitoring key aspects of the Bay's health. Data from the buoys are used to track sediment plumes spilling into the Bay following storms, measure oxygen levels important to fish throughout the year and to forecast the distribution and severity of dangerous bacteria—information that is critical to successful aquaculture operations.

Climate and Resiliency—\$200,000

NOAA and the U.S. Geological Survey lead implementing the climate resiliency goal for the Chesapeake Bay Program partnership. The NOAA Chesapeake Bay Office maintains a full-time climate resiliency specialist to coordinate all climate activities across the Chesapeake Bay Program, including activities such as monitoring for the impacts of sea level rise, coastal flooding, increased storm intensity and their effects on living resources and coastal communities.

Thank you for your consideration of these very important requests to maintain funding for programs that are critical to the health of the Chesapeake Bay and its natural resources. Please contact Peter J. Marx at 410-905-2515 or Peter@ChooseCleanWater.org with any questions or concerns.

MEMBERS OF THE CHOOSE CLEAN WATER COALITION

Action Together Northeastern Pennsylvania	Friends of the Middle River
Alliance for the Chesapeake Bay	Friends of the Nanticoke River
Alliance for the Shenandoah Valley	Friends of the North Fork of the Shenandoah River
American Chestnut Land Trust	Friends of the Rappahannock
American Rivers	Friends of St. Clements Bay
Anacostia Riverkeeper	Goose Creek Association
Anacostia Watershed Society	Interfaith Partners for the Chesapeake
Annapolis Green	James River Association
Arundel Rivers Federation	Lackawanna River Conservation Association
Audubon Maryland/DC	Lancaster Farmland Trust
Audubon Naturalist Society	Little Falls Watershed Alliance
Audubon Society of Northern Virginia	Lower Shore Land Trust
Back Creek Conservancy	Lower Susquehanna Riverkeeper
Baltimore Tree Trust	Lynnhaven River NOW
Blue Heron Environmental Network	Maryland Conservation Council
Blue Ridge Watershed Coalition	Maryland Environmental Health Network
Blue Water Baltimore	Maryland League of Conservation Voters
Butternut Valley Alliance	Maryland Native Plant Society
Cacapon Institute	Maryland Nonprofits
Capital Region Land Conservancy	Maryland Science Center
Catskill Mountainkeeper	Mattawoman Watershed Society
Center for Progressive Reform	Mid-Atlantic Council Trout Unlimited
Chapman Forest Foundation	Middle Susquehanna Riverkeeper
Chemung River Friends	Muddy Branch Alliance
Chesapeake Bay Foundation	National Aquarium
Chesapeake Climate Action Network	National Parks Conservation Association
Chesapeake Conservancy	National Wildlife Federation
Chesapeake Legal Alliance	Natural Resources Defense Council
Chesapeake Wildlife Heritage	Nature Abounds
Clean Fairfax	NeighborSpace of Baltimore County
Clean Water Action	New York League of Conservation Voters
Clean Water Linganore	New York State Council of Trout Unlimited
Coalition for Smarter Growth	Neighbors of the Northwest Branch
Conservation Voters of Pennsylvania	Otsego County Conservation Association
DC Environmental Network	Otsego Land Trust
Delaware Nature Society	Partnership for Smarter Growth
Ducks Unlimited	Patapsco Heritage Greenway
Earth Conservation Corps	Patuxent Tidewater Land Trust
Earthworks	PennEnvironment
Earth Forum of Howard County	PennFuture
Eastern Pennsylvania Coalition for Abandoned Mine Reclamation	Pennsylvania Council of Churches
Eastern Shore Land Conservancy	Pennsylvania Council of Trout Unlimited
Elizabeth River Project	Piedmont Environmental Council
Environmental Integrity Project	Potomac Conservancy
Environmental Justice Center of Chestnut Hill United Church	Potomac Riverkeeper
Environmental Working Group	Potomac Riverkeeper Network
Experience Learning	Potomac Valley Audubon Society
Float Fishermen of Virginia	Queen Anne's Conservation Association
Friends of Accotink Creek	Preservation Maryland
Friends of Frederick County	Rachel Carson Council
Friends of Herring Run Park	Restore America's Estuaries
Friends of Little Hunting Creek	Rappahannock League for Environmental Protection
Friends of Lower Beaverdam Creek	Richmond Audubon Society
Friends of Quincy Run	Rivanna Conservation Alliance
Friends of Sligo Creek	Rock Creek Conservancy
Friends of the Bohemia	St. Mary's River Watershed Association
Friends of the Cacapon River	
Friends of Dyke Marsh	

Savage River Watershed Association	Trout Unlimited
Severn River Association	Upper Potomac Riverkeeper
Shenandoah Riverkeeper Shenandoah Valley Network	Upper Susquehanna Coalition
ShoreRivers	Virginia Association of Biological Farming
Sidney Center Improvement Group	Virginia Conservation Network
Sierra Club—Maryland Chapter	Virginia League of Conservation Voters
Sleepy Creek Watershed Association	Warm Springs Watershed Association
Southeast Rural Community Assistance Project	Waterfront Partnership of Baltimore, Inc.
Southern Maryland Audubon Society	Waterkeepers Chesapeake
SouthWings	West Virginia Citizen Action Group
Susquehanna Heritage	West Virginia Environmental Council
Talbot Preservation Alliance	West Virginia Highlands Conservancy
The Downstream Project	West Virginia Rivers Coalition
Transition Howard County	Wetlands Watch
Trash Free Maryland	Wicomico Environmental Trust

[This statement was submitted by Peter J. Marx, contractor for the Choose Clean Water Coalition.]

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 2020 budget and has identified the following funding needs:

\$122.5 million for Salmon Management Activities of which:

- \$26.6 million supports Mitchell Act Programs to implement reforms called for in the “Conservation of Columbia Basin Fish” and the Federal Columbia River Power System Biological Opinion, of which \$6.7 million (or 25 percent of the enacted amount) is directed to the Tribes to enhance natural stock recovery programs;
- \$95.9 million for the Pacific Salmon Treaty, of which \$42.3 million is annual operations for the implementation of the 2019–2028 Agreement, and \$53.6 million is one-time funding for specific projects to support the implementation of the 2019–2028 Agreement.

\$70 million for the Pacific Coastal Salmon Recovery Fund to support on-the-ground salmon restoration activities.

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 Nez Perce Tribe. CRITFC provides coordination and technical assistance to the Tribes in regional, national and international efforts to protect and restore the fisheries and fish habitat.

In 1855, the United States entered into treaties with the four Tribes.¹ The Tribes' ceded 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.

CRITFC and our member Tribes are principal implementers of actions laid out in three landmark agreements: (1) the recently extended Columbia Basin Fish Ac-

¹Treaty 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

ords with Federal action agencies overseeing the Federal hydro system in the Columbia Basin,² (2) a new 10-Year Fisheries Management Plan with Federal, Tribal and State parties under *U.S. v. Oregon*, and (3) a new Chinook Chapter of the Pacific Salmon Treaty.³ These agreements establish regional and international commitments on harvest and fish production efforts, commitments to critical investments in habitat restoration, and resolving contentious issues by seeking balance of the many demands within 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 few. Continued Federal funding support is needed to accomplish the management objectives embodied in the agreements.

Columbia River (Mitchell Act) Hatchery Program.—Restoring Pacific salmon and providing for sustainable fisheries requires using the Columbia River Mitchell Act hatchery program to supplement naturally spawning stocks and populations. To accomplish this goal, \$26.6 million is requested for the Tribal and State co-managers to jointly reform the Mitchell Act hatchery program. Of this amount, \$6.7 million, or 25 percent of enacted funding, will be made available to the Columbia River Treaty Tribes for supplementation (natural stock recovery) programs. The Mitchell Act program provides regional economic benefits. NOAA Fisheries estimates that the program generates about \$38 million in income and supports 870 jobs.

Since 1982, CRITFC has called for hatchery reform to meet recovery needs and meet mitigation obligations. In 1991, this subcommittee directed that “Mitchell Act hatcheries be operated in a manner so as to implement a program to release fish in the upper Columbia River basin above the Bonneville Dam to assist in the rebuilding of upriver naturally-spawning salmon runs.” Since 1991, we have made progress in increasing the upstream releases of salmon including Mitchell Act fish that have assisted the rebuilding and restoration of naturally-spawning upriver runs of chinook and coho. These efforts need to continue.

We now face the challenges of managing for salmon populations listed for protection under the ESA, while also meeting mitigation obligations. The Final Environmental Impact Statement (FEIS) for operation of Columbia River basin hatcheries released by NOAA in 2016 illustrates the conundrum we face. While the FEIS, which assumes level funding for Mitchell Act hatcheries, it also points out the need for hatchery reform. The implementation scenario for the preferred alternative calls for substantial reductions in hatchery releases of fall chinook. Under the preferred alternative the future is increased regulation under the ESA, resulting in more constrained fisheries along the west coast. The funding for the Mitchell Act program should be increased along with natural stock recovery program reform (supplementation) so that we can make progress towards ESA delisting. This would transition the Mitchell Act program to a much more effective mitigation program.

We support hatchery reform to aid in salmon recovery while meeting mitigation obligations. The CRITFC Tribes are leaders in designing and managing hatchery facilities to aid in salmon restoration and believe similar practices need to be implemented throughout the basin to reform current hatchery production efforts. Years of inadequate funding have taken a toll resulting in deteriorating facilities that do not serve our objectives.

Evidence to Support Tribal Salmon Restoration Programs under the Mitchell Act.—The Tribes’ approach to salmon recovery is to put fish back in to the rivers and protect the watersheds where fish live. Scientific documentation of Tribal supplementation success is available upon request. The evidence is seen by the increasing returns of salmon in the Columbia River Basin. Wild spring chinook salmon are returning in large numbers to the Umatilla, Yakima and Klickitat tributaries. Coho in the Clearwater River are now abundant after Snake River coho was once declared extinct. Fish are returning to the Columbia River Basin and it is built on more than 30 years of Tribal projects.

Once considered for listing under the ESA, only 20,000 fall chinook returned to the Hanford Reach on the Columbia River in the early 1980’s. This salmon run has been rebuilt through the implementation of the Vernita Bar agreement of the mid-1980s combined with a hatchery program that incorporated biologically appropriate salmon that spawn naturally upon their return to the spawning beds. Today, the Hanford Reach fall chinook run is one of the healthiest runs in the basin supporting fisheries in Alaska, Canada, and the mainstem Columbia River. In 2013, close to 700,000 Fall Chinook destined for the Hanford Reach entered the Columbia River, which was a record since the construction of Bonneville Dam.

²The Nez Perce Tribe is not a Columbia Basin Fish Accord signatory

³See Salmon Win A Triple Crown” at http://www.critfc.org/text/wana_109.pdf

In the Snake River Basin, fall chinook has been brought back from the brink of extinction. Listed as threatened under the ESA, the estimated return of naturally-spawning Snake River fall chinook averaged 328 adults from 1986–1992. In 1994, fewer than 2,000 Snake River fall chinook returned to the Columbia River Basin. Thanks to the Nez Perce Tribe’s modern supplementation program fall chinook are rebounding and the Snake River fall chinook is well on their way to recovery and ESA delisting. In 2013, about 56,000 fall chinook made it past Lower Granite Dam. Of those, approximately 21,000 were wild, twice the previous record for wild returns since the dam was constructed in 1975.

A Request for Review of Salmon Mass-Marking Programs.—CRITFC endeavors to secure a unified hatchery strategy among Tribal, Federal and State co-managers. To that end, we seek to build hatchery programs using the best available science and supported by adequate, efficient budgets. A Congressional requirement, delivered through prior appropriations language, to visibly mark all salmon produced in federally funded hatcheries should be reconsidered. We have requested that Federal mass-marking requirements, and correlated funding, be reviewed for compatibility with our overall objective of ESA delisting and with prevailing laws and agreements: *U.S. v Oregon*, Pacific Salmon Treaty and the Columbia Basin Fish Accords.⁴

Salmon managers should be provided the latitude to make case-by-case decisions whether to mark fish and, if so, in the appropriate percentages.

Pacific Salmon Treaty Program.—CRITFC supports the U.S. Section recommendation of \$95.5 million for implementation of the revised Pacific Salmon Treaty (Treaty). Of this amount, \$26.4 million is for the Pacific Salmon Treaty’s obligations for base program with Alaska, Oregon, Idaho, Washington, and NOAA. In addition, we support \$1.8 million as first provided in 1997 to carry out necessary research and management activities to implement the abundance-based management approach of the Chinook Chapter to the Treaty. The recommended amount represents an increase of \$19.4 million from base level for the States to implement the provisions, management and technical changes adopted by the U.S. and Canada in the recently completed revised Annex Chapters. The U.S. Section recommends the following funding levels to improve the coded wire tag program (\$2,500,000) to improve Puget Sound critical stocks (\$4,800,000 annually and \$27,800,000 one-time funding) and continue to enhance in transboundary rivers (\$367,000). These funds are subjected annually to a strict technical review process. Funding has level program for the States has remained the same since the treaty was signed in 1985, despite additional management responsibilities.

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.

The PCSRF has funded 368 Yakama, Umatilla, Warm Springs, Nez Perce, and CRITFC Tribal salmon recovery projects. These projects have contributed greatly to the sustainability of Columbia Basin salmon species and their habitat. Accomplishments include 1,660 stream miles being protected; 411 miles of stream made accessible to salmon; 4,950 acres of riparian area treated; 11,341 acres conserved by acquisition or lease; and 1.2 million salmon fry/smolt released annually. The PCSRF is vital to fulfill the region’s goal of full salmon recovery and sustainability of the fishery.

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 at \$70 million for the PCSRF fiscal year 2020 allocation. Long-term economic benefits can be achieved by making PCSRF investments on-the-ground to rebuild sustainable, harvestable salmon populations into the future.

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

⁴Letter from Bruce Jim, Chairman, Columbia River Inter-Tribal Fish Commission to U.S. House of Representatives Chairmen Frank Wolf, Mike Simpson and Doc Hastings, July 11, 2011

citizens to enjoy. This is a time when increased effort and participation are demanded of all of us and we ask for your continued support of a coordinated, comprehensive effort to restore the shared salmon resource of the Columbia and Snake River Basins. We will be pleased to provide any additional information that this subcommittee may require.

[This statement was submitted by Jaime A. Pinkham, Executive Director.]

PREPARED STATEMENT OF THE CONSORTIUM FOR OCEAN LEADERSHIP
NSF, NOAA, AND NASA

On behalf of the Consortium for Ocean Leadership (COL), which represents the leading ocean science, research, and technology organizations from academia, industry, and philanthropy (to include aquariums), I appreciate the opportunity to submit for the record our fiscal year 2020 funding priorities for the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA). As a maritime Nation, our national, homeland, energy, food, water, and economic securities, as well as our public health and safety, depend on a healthy ocean—which in turn depends on ocean science and technology—a concept I refer to as “ocean security.” This understanding enables us to have advance notice of oncoming hurricanes, to sustainably manage fish populations, to let boat operators know when there’s rough weather ahead, to allow for the safety of maritime commerce, to forecast harmful algal blooms, and so much more that helps protect our Nation, its infrastructure, and its prosperity. I hope that as the subcommittee makes funding decisions for fiscal year 2020, you will provide the needed support for programs, many of which are outlined below, that advance our Nation’s ocean security, ensuring we remain an economically competitive, scientifically literate nation secure in our access to food, water, and energy.

Many of the issues addressed in this testimony are cross-cutting. The importance of observing our ocean doesn’t exist in a vacuum but instead includes NOAA’s Integrated Ocean Observing System (IOOS), NSF’s Ocean Observatories Initiative, and NASA’s Plankton, Aerosol, Cloud, ocean Ecosystem mission (to name just a few). Advancing science, technology, engineering, and math (STEM) education falls to, among others, NOAA’s Office of Education, NASA’s Office of STEM Engagement, and NSF’s Education and Human Resources. But it’s not just the Federal ocean science community investing in these and other similar enterprises; there are more than 600 businesses engaged in ocean observation and forecasting; over 400 postsecondary institutions that provide ocean-related certificates or degrees; and in excess of 45,000 nonprofits focused on ocean and coastal activities. To share information, observations, technology, and best practices, cross-sector and interagency collaboration are necessary. To this end, the National Oceanographic Partnership Program (NOPP), a congressionally mandated program established in 1997, is an ideal vehicle to advance collaborative efforts and already has been involved with funding projects such as IOOS, the Argo Project, and the JASON project. *To fully utilize NOPP and facilitate the success of projects promoting national goals (national security, economic prosperity, quality of life) related to ocean knowledge, I respectfully request the subcommittee provide \$16 million in NOPP funding—\$8 million to NOAA and \$8 million to NASA.* I thank the subcommittee for their support of the program throughout the fiscal year 2019 appropriations process.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

For NOAA to fully execute its mission of service and science, I respectfully request \$6.5 billion for the agency, in addition to support to other programs highlighted below.

Ocean observations are a requisite first step when it comes to understanding the ocean. Without temperature data, we can’t know who needs to evacuate from a hurricane’s path; without depth data, we can’t tell if the shipping channel is deep enough for a vessel to pass through safely; without chemical analysis, we can’t get notice that changing pH will wipe out a shellfish farm; without knowing the biodiversity of an area, we can’t tell if it should be a marine sanctuary or a potential site for offshore wind development. The U.S Integrated Ocean Observing System (IOOS) is a coordinated network of technologies (such as gliders, satellites, buoys, underwater vehicles, and tide gauges) that generate continuous data on our coasts, ocean, and Great Lakes. Building and leveraging local and regional partnerships ensures IOOS’ efficiency and provides the infrastructure needed to support jobs, the

economy, maritime safety, and environmental health. *To ensure we continue to collect data and increase our ocean observations, I respectfully request \$50.5 million for U.S. IOOS in fiscal year 2020. This includes \$3.2 million to install high-frequency radar systems to close gaps in surface current mapping; \$3.5 million for underwater gliders to detect harmful algal blooms, ensure safe navigation, and improve hurricane warnings; \$4.3 million for research and development; and funding to integrate Federal and non-Federal data and coordinate across NOAA and the 17 Federal IOOS agencies.*

Hand-in-hand with ocean observations is ocean exploration. NOAA's Office of Ocean Exploration and Research (OER), the only Federal organization dedicated to ocean exploration, has not only made significant discoveries but has captured public imagination about our blue planet. Exploring the more than 1.3 billion cubic kilometers of water that makes up our global ocean involves more than just OER but other Federal and State agencies, nonprofits, private industry, and academic institutions. *I respectfully request the subcommittee fund OER at \$50 million and that report language address the importance of collaboration and coordination among Federal and State agencies, academic institutions, industry, and other oceanographic partners to maximize return on investment and advance shared data, science and public engagement, and innovative technology.*

I thank the subcommittee for continuing to recognize the importance of STEM education and extension programs, despite repeated attempts by the administration to eliminate many of them. *I respectfully request \$12 million for NOAA's Bay-Watershed Education and Training and \$8 million for NOAA's Environmental Literacy Program.* The two goals of NOAA's agency-wide education strategic plan required by the America COMPETES Act are workforce development and environmental literacy, where formal and informal education and outreach create an environmentally literate society. Sustained and adequate funding for these programs not only advances NOAA's mission but grows the STEM workforce, strengthens our economy, and ensures our national security. 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. Adequately funding ELP will allow programs such as the National Ocean Sciences Bowl (NOSB), a quiz-bowl style ocean science competition for high schoolers that has received ELP funding during its 22-year history, to flourish. The NOSB alone has graduated tens of thousands of students from high school with a solid ocean science foundation who go on to careers that advance our Nation and keep it secure.

For more than 50 years, the National Sea Grant College Program (Sea Grant) has supported coastal and Great Lakes communities, improving community and economic resiliency, ensuring the health of coastal ecosystems, and advancing environmental literacy and workforce education. Between February 2016 and January 2017, Sea Grant's research, extension, and education resulted in 1.4 million acres of restored or protected habitat, 494 communities with improved resilience, and 2,002 seafood HACCP safety certifications. The \$74 million in Federal investments in 2016 resulted in a \$611 million economic benefit. *I respectfully request \$93.5 million for the National Sea Grant College Program in fiscal year 2020.*

The importance of programs that address emerging issues cannot be understated. One of these, NOAA's Marine Debris Program, has grown in importance and visibility as scientists and the public better understand the widespread impact of the ocean plastic problem. *I respectfully request \$10 million for this program to evaluate, track, and clean up debris that threatens ocean health.*

NATIONAL SCIENCE FOUNDATION

As the only Federal agency tasked with supporting all fields of fundamental science and engineering (except medical sciences), NSF is vital to our nation's scientific enterprise, today and tomorrow. *I respectfully request \$9 billion for NSF "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense" in fiscal year 2020.*

I want to thank the subcommittee for providing \$127 million in fiscal year 2019 to finish out the final year of a three-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 support for these critical research vessels.*

As with NOAA, 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 a critical for all STEM fields—not just ocean science. 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's 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 Communities 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 growing our blue economy.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

While images of faraway galaxies lead to a desire for space exploration, equally memorable are photos of our planet as seen from space. While the administration's desire for space exploration is exciting, it should not come at the expense of understanding our own home. *I respectfully request \$7.25 billion for the Science Mission Directorate and \$2.5 billion for NASA Earth Science.* This should include support for the agency's Earth-facing missions, including those proposed for elimination in the president's budget request, specifically the Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission and the Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder instrument. Both of these were recommendations from the 2007 Earth Science decadal survey. As support is thrown behind the space-based efforts at NASA, let's not forget how space-based ocean science can inform research related to ocean work on other moons and planets.

In closing, it is clear that ocean science and technology strengthen our national and homeland security; underpin our economy; ensure food, water, and energy security; and provide for safety and efficiency in marine transportation. To ensure this ocean security upon which we all depend, our Federal ocean science agencies and programs must be adequately and consistently funded. While the Cold War may remain a distant memory today, the late Admiral James D. Watkins, chief of naval operations from 1982–1986, used to state, "Oceanography won the Cold War." Our knowledge of the undersea domain gave the United States a competitive advantage over our enemies. That advantage is in jeopardy today—not just in comparison to Federal ocean science investments by our competitors but in comparison to oceanographic threats. In 30 years, will we say oceanography helped us win the "cold war" against harmful algal blooms, ocean plastic, changing climate and ocean conditions, and illegal fishing? Only if we have a prosperous, sustainable, well-understood ocean, and we will only achieve that with Federal investments.

As you work to provide funding for these critical programs, COL and our member institutions are doing all we can to give you the subcommittee allocations necessary to fully fund these programs as we continue to encourage the creation of a bipartisan budget agreement that raises the discretionary spending caps. I know you face difficult decisions that involve offsets and divestments to achieve a balanced budget. COL and our members stand ready to engage in discussion to help establish priorities around the ocean security framework to support these difficult decisions. Thank you for your exemplary leadership and dedicated work and for the opportunity to provide input into fiscal year 2020 appropriations.

COL MEMBERS

Bermuda Institute of Ocean Sciences	Oregon State University
Bigelow Laboratory for Ocean Sciences	Pennsylvania State University
College of William & Mary	Rutgers University
Columbia University(LDEO)	Skidaway Institute of
Dauphin Island Sea Lab	Oceanography(UGA)
Duke University	Stanford University
FAU Harbor Branch Oceanographic	Stony Brook University
Institute	Texas A&M University
Harte Research Institute	US Naval Postgraduate School
Louisiana State University	University of Alaska Fairbanks
Massachusetts Institute of Technology	University of California(UC) Davis
Monterey Bay Aquarium Research	UC San Diego(Scripps)
Institute	UC Santa Barbara
Moss Landing Marine Laboratories	UC Santa Cruz
Mote Marine Laboratory	University of Delaware
Old Dominion University	University of Florida

University of Hawaii	Johns Hopkins University APL
Center for Environmental Science(UMD)	Marine Technology Society
University of Massachusetts Dartmouth	MARACOOS
University of Miami	Monmouth University Urban Coast
University of New Hampshire	Institute
University of North Carolina(UNC)	Mystic Aquarium
Chapel Hill	National Aquarium
UNC Wilmington	NOIA
University of Rhode Island	NERACOOS
University of South Carolina	North Carolina State University
University of South Florida	North Pacific Research Board
University of Southern California	Nova Southeastern University
University of Southern Mississippi	Savannah State University
University of Texas Austin	South Carolina Sea Grant Consortium
University of Washington	Southeastern Universities Research
Woods Hole Oceanographic Institution	Association
AOS	US Arctic Research Commission
Alaska SeaLife Center	University of Maine
Aquarium of the Pacific	Ocean Networks Canada
Arctic Research Consortium of the US	University of Wisconsin Milwaukee
Consumer Energy Alliance	School of Freshwater Sciences
Cooperative Institute for Research in	ASV Global LLC
Environmental Sciences	Chevron USA
Dalhousie University	Eastman Chemical Company
Earth2Ocean	Esri
East Carolina University	Exocetus Autonomous Systems
Estuary & Ocean Science Center, SFSU	L-3 MariPro Inc
Florida Institute of Oceanography	Liquid Robotics Inc
Moore Foundation	Sea-Bird Scientific
Hubbs SeaWorld Research Institute	Severn Marine Technologies LLC
IEEE Oceanic Engineering Society	Shell Exploration and Production
Institute for Global Environmental	Company
Strategies	Sonardyne, Inc
Institute for Marine and Antarctic	Teledyne CARIS
Studies	Teledyne RD Instruments
IOOS Association	Vulcan Inc

[This statement was submitted by RADM Jonathan White, USN (Ret.), President and CEO.]

PREPARED STATEMENT OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

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 2020, COSSA urges the Committee to appropriate \$9 billion for the National Science Foundation (NSF), \$8.45 billion for the Census Bureau, \$46.5 million for the National Institute of Justice (NIJ), and \$48 million for the Bureau of Justice Statistics (BJS).

First, I wish to thank the subcommittee for its longstanding support for Federal science agencies. Despite tough, ongoing fiscal challenges, the subcommittee has continued to maintain funding for basic research as a top priority. This would not be possible without science champions such as yourselves. Thank you.

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 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 important data needed to conduct social science research that informs policy decisions. Taken together, Federal social and behavioral science and statistical data help provide answers to complex, human-centered questions.

To cite just a few examples:¹

- Major leaps in emulating human mental capabilities in the fields of information technology and computer science, such as in machine translation and artificial intelligence, have been possible thanks to basic linguistic research.
- Anthropologists* applied expertise in cultural practices to guide policy and shape interventions and strategy in combatting the Ebola epidemic in West Africa.
- Research in *psychology* and *economics* has shown that individuals are not saving enough for retirement and led to enactment of the *Pension Protection Act* of 2006, encouraging the use of practices such as automatic enrollment, employer contribution, contribution escalation, and qualified default investment alternative practices.

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. Without these sciences, policy-making 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 and the 37 Senators who signed the April 8, 2019 bipartisan letter in support of *at least* \$9 billion for the National Science Foundation (NSF) in fiscal year 2020. NSF and the broader U.S. scientific enterprise require 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.

NSF is the only U.S. Federal agency tasked with *supporting basic scientific 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 the Social, Behavioral, and Economic Sciences Directorate (SBE)—one of seven research directorates at NSF—represents less than 5 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—and resulting discoveries—simply because of the centrality of the directorate to the research community.

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*, 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.”²

While continuing to serve as the home for basic scientific discovery, NSF has also been planning and funding research activities as part of its 10 Big Ideas for Future Investment over the last several years. The concepts, goals, and directions of the Big Ideas are exciting and promise to push the frontiers of science. However, we remain concerned about NSF losing its defining characteristic, which is to be the incubator for basic scientific discovery across all areas of science. While we encourage support for the Big Ideas in fiscal year 2020, we hope that such investments do not come at the expense of NSF’s core research activities. 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. COSSA urges the Committee to ensure a balanced approach is taken within NSF to support the 10 Big Ideas and NSF’s core research activities.

CENSUS BUREAU U.S. DEPARTMENT OF COMMERCE

COSSA urges the Committee to appropriate \$8.45 billion for the U.S. Census Bureau, including at least \$7.581 billion for the 2020 Census, in fiscal year 2020. fiscal year 2020 will be the culmination of nearly a decade of research, planning, testing, and preparation for the next decennial census. As in previous decennial cycles, the

¹ More examples at <https://www.whysocialscience.com>

² <https://www.nap.edu/catalog/24790/the-value-of-social-behavioral-and-economic-sciences-to-national-priorities>

Census year requires a substantial appropriation from Congress to support the massive scale of the Census operation, the Nation's largest non-military mobilization. Further complicating 2020 preparations is the potential addition of a citizenship question, which, while currently in legal limbo, could be re-added to the questionnaire before Census Day. Given the potential-and currently unquantified-impact this question could have on self-response, it is crucial that the Bureau have sufficient fiscal year 2020 funding to enable it to nimbly respond to contingencies like this to protect the quality of the Census.

Fiscal year 2020 funding will be used for a final push of preparation ahead of Census Day, including opening field offices nationwide, forming partnerships with local organizations, finalizing the advertising campaign, and printing and packaging the mailings. Once the decennial census has begun, efforts will continue to encourage self-response by Internet, telephone, and paper; hundreds of thousands of field staff will be trained and deployed to collect responses; and the Bureau will work to coordinate the operations, data collection, and data processing systems. As the count wraps up, the Census Bureau will begin to process, analyze, and prepare the results for publication and close out the massive operation. Underfunding the Census in its final push towards Census Day on April 1, 2020 could undo years of work and preparation, resulting in disastrous consequences for the accuracy of the census count.

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 Constitutionally-mandated Decennial Census, the ACS is a "mandatory" national survey. The accuracy of the data collected by the ACS relies on this mandatory status. Targeted cuts and changes to make the survey voluntary would significantly undermine the ability to collect usable data on all U.S. counties, particularly in less populous, rural areas of the country.

NATIONAL INSTITUTE OF JUSTICE AND BUREAU OF JUSTICE STATISTICS
U.S. DEPARTMENT OF JUSTICE

COSSA urges the Committee to appropriate \$46.5 million for the National Institute of Justice (NIJ) and \$48 million for the Bureau of Justice Statistics (BJS) within the U.S. Department of Justice (DOJ) in fiscal year 2020. NIJ serves as the research and evaluation 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. Both agencies received devastating cuts in fiscal year 2019, making increases in fiscal year 2020 even more crucial as NIJ and BJS must now address new congressional mandates, including implementation of the *FIRST STEP Act*.

The Bureau of Justice Statistics (BJS) is one of 13 principal Federal statistical agencies. BJS produces data that provides statistical evidence needed by researchers and criminal justice policy decision makers. Taken together with NIJ, these modest annual investments represent the only dedicated sources of Federal research support committed to enhancing our understanding of crime and the criminal justice system, including around topics like victimization, law enforcement, recidivism and reentry, drugs and crime, and Tribal justice.

Numerous pressing criminal justice and law enforcement issues are at the fore of public consciousness today, including understanding the mental health needs of people involved in the justice system, the drivers of domestic radicalization, effective solutions to opioid addiction, and ways to improve police officer safety and community relations. By working with jurisdictions at all levels to compile data and support research, DOJ—through NIJ and BJS investments—provides key insights that improve public safety. Making the results of this research available to State and local officials and the public allows justice and law enforcement professionals to learn what works, adopt best practices, and improve public safety by leveraging the best research and data to protect the public, reduce recidivism, and support law enforcement and communities. Congress must prioritize Federal data collection and research if we are to provide local, State, and Federal officials with the information they need to develop strategies to improve public safety in our communities.

Thank you for the opportunity to offer this statement. Please do not hesitate to contact me should you require additional information.

GOVERNING ASSOCIATIONS

American Anthropological Association	American Statistical Association
American Association For Public Opinion Research	Law And Society Association
American Economic Association	Linguistic Society of America
American Educational Research Association	Midwest Political Science Association
American Political Science Association	National Communication Association
American Psychological Association	Population Association of America
American Society of Criminology	Society for Personality and Social Psychology
American Sociological Association	Society for Research in Child Development

[This statement was submitted by Wendy A. Naus, Executive Director.]

PREPARED STATEMENT OF DEMAND PROGRESS

Dear Chairman Moran, Ranking Member Shaheen, and Members of the subcommittee:

Thank you for the opportunity to submit testimony regarding the fiscal year 2020 Commerce, Justice, Science, and Related Agencies Appropriations Bill. I am testifying on behalf of Demand Progress, a national grassroots organization with more than two million affiliated activists who fight for the basic rights and freedoms needed for a modern democracy. Our policy agenda encompasses civil liberties, civil rights, money in politics, and government reform. Today we testify regarding increasing transparency and accountability at the Department of Justice, specifically with regard to the growing body of secret law embedded within Office of Legal Counsel opinions.

THE OFFICE OF LEGAL COUNSEL

Opinions by the Justice Department's Office of Legal Counsel ("OLC") can have the effect of law within the executive branch, but they are regularly withheld from Congress and the public. The executive branch withholds not only the substance of these opinions but also basic information about them, such as when and to whom they are issued, the subject of their analyses, and even how many are currently in effect. Worse, the OLC may and has issued final opinions that are at variance with interpretations of law made by Congress and the courts. The Subcommittee on Commerce, Justice, Science, and Related Agencies can take the first step toward addressing this problem by requiring the Department of Justice to report on the volume of OLC opinions that have been produced with taxpayers' money.

Office of Legal Counsel opinions pose a serious threat to the rule of law, and secrecy around them has caused significant harm. For example, the now-infamous "torture memos," which declared legal under domestic and international law life-threatening "enhanced interrogation techniques" in secret CIA prisons, are, in fact, OLC opinions.¹ One of these opinions acknowledged three times that OLC "cannot predict with confidence whether a court would agree with this conclusion," but nevertheless concluded that the "question is unlikely to be subject to judicial inquiry."² The Department of Justice's Office of Professional Responsibility concluded that one author, John Yoo, "committed intentional professional misconduct when he violated his duty to exercise independent legal judgment and render thorough, objective, and candid legal advice."³

After the matter did encounter public scrutiny, then-Attorney General Eric Holder articulated another power of OLC opinions: "the Department would not prosecute anyone who acted in good faith and within the scope of the legal guidance given by the Office of Legal Counsel regarding the interrogation of detainees."⁴ Office of Legal Counsel opinions are similarly at the heart of a number of other controversies, like whether a sitting president may be indicted,⁵ whether the president may use

¹ <https://www.nytimes.com/2004/06/27/world/reach-war-interrogations-aides-say-memo-backed-coercion-already-use.html>

² <https://www.justice.gov/sites/default/files/olc/legacy/2013/10/21/memo-bradbury2005.pdf>

³ https://www.aclu.org/files/pdfs/natsec/opr20100219/20090729_OPR_Final_Report_with_20100719-declassifications.pdf

⁴ <https://www.justice.gov/opa/pr/statement-attorney-general-regarding-investigation-interrogation-certain-detainees>

⁵ <https://www.justice.gov/olc/opinion/sitting-president%E2%80%99s-amenability-indictment-and-criminal-prosecution>

an autopen to sign a bill,⁶ under what circumstances an American citizen can be targeted by a drone strike,⁷ the ban on immigrants from Muslim countries,⁸ and individuals' eligibility for certain senior government positions.⁹

Withholding OLC opinions is not only against the interests of the rule of law and transparency writ large, it is also at odds with express Congressional intent and agency policy. Congress incorporated a "presumption of openness" in the 2016 FOIA Improvement Act, which codified an Obama-era executive order that prohibited an agency from withholding documents except in situations where disclosure would result in foreseeable harm.¹⁰ In the context of OLC opinions specifically, 20 prominent former OLC attorneys wrote a memorandum on best practices in 2006 calling on the OLC to "publicly disclose its written legal opinions in a timely manner, absent strong reasons for delay or nondisclosure."¹¹ And the Office of Legal Counsel itself, in a 2010 "best practices" memo, asserted that "the Office operates under the presumption that it should make its significant opinions fully and promptly available to the public," including considering "disclosing documents even if they technically fall within the scope of a FOIA exemption."¹²

Considering the guidance, policies, actions by Congress, and the significance of OLC opinions detailed above, the policy of the Justice Department should be to disclose all opinions to congress and the public by default, except in certain limited circumstances. The government instead argues, however, that OLC opinions are not final, but rather "predecisional" and "deliberative," putting them at times outside the reach even of the Freedom of Information Act, an argument with which some courts have agreed.¹³ This stands in contrast to the OLC's "best practices" memorandum, which describes its "core function" as providing "controlling advice to Executive Branch officials on questions of law that are centrally important to the functioning of the Federal Government."¹⁴ That memorandum further acknowledged that OLC is "frequently asked to opine on issues of first impression that are unlikely to be resolved by the courts" and that in such circumstances "OLC's advice may effectively be the final word on the controlling law."¹⁵

This subcommittee need not resolve all of the issues concerning OLC opinions today. Rather, before this subcommittee is an opportunity to assess the scope of secret law emanating from the Justice Department by requiring a basic accounting of OLC opinions that are currently in effect. The Department of Justice obscures the scope of the problems discussed here, and makes OLC opinions even harder to reach through the Freedom of Information Act, by failing to disclose even the existence of an unknown number of OLC opinions. A 2012 review by the Sunlight Foundation, for instance, found that the Department of Justice redacted the titles of 36 percent of at least 509 opinions issued from 1998 to 2012.¹⁶

We recognize that due to classification, national security, and privacy concerns, not all OLC reports can be fully released to the public. Nevertheless, there is an analogous situation with Federal Inspectors General and the Government Accountability Office. Several executive branch IGs and other oversight institutions have found ways to restrict access to sensitive reports without keeping the public in the dark about the reports' existence. For example, the Department of Defense Inspector General and the Government Accountability Office currently provide basic information, such as a report title or report number, in cases when some or all of a report's contents must remain nonpublic. If the Department of Defense—which produces a large number of classified and sensitive reports—can provide this level of transparency, a similar remedy should suit the Office of Legal Counsel. By providing this information, the Department of Justice would provide the information it determines can be shared publicly, and would empower the public to request the report through the Freedom of Information Act when a dispute around publication persists.

⁶ <https://www.justice.gov/olc/opinion/whether-president-may-sign-bill-directing-his-signature-be-affixed-it>

⁷ https://www.washingtonpost.com/world/national-security/legal-memo-backing-drone-strike-is-released/2014/06/23/1f48dd16-faec-11e3-8176-f2c941cf35f1_story.html

⁸ <https://assets.documentcloud.org/documents/3442905/EO-Foreign-Terrorist-Entry.pdf>

⁹ <https://www.justice.gov/olc/file/1078061/download>

¹⁰ Public Law No: 114–185, available at <https://www.congress.gov/bill/114th-congress/senate-bill/337/>

¹¹ https://web.archive.org/web/20090624234142/http://www.acslaw.org/files/Microsoft%20Word%20-%2011—Johnsen_OLC.pdf

¹² <http://www.justice.gov/olc/pdf/olc-legal-advice-opinions.pdf>

¹³ See [https://www.cadc.uscourts.gov/Internet/opinions.nsf/BAB47AE67CFA826785257C550053C612/\\$file/12-5363-1473387.pdf](https://www.cadc.uscourts.gov/Internet/opinions.nsf/BAB47AE67CFA826785257C550053C612/$file/12-5363-1473387.pdf)

¹⁴ <https://www.justice.gov/sites/default/files/olc/legacy/2010/08/26/olc-legal-advice-opinions.pdf>

¹⁵ *Id.*

¹⁶ <https://sunlightfoundation.com/blog/2012/08/15/39-of-office-of-legal-counsel-opinions-kept-from-the-public/>

In sum, an unknown subset of OLC opinions has been actively kept secret by the executive branch from Congress and the public. Their concealment undermines the system of checks and balances created by the framers, and at times the withholding of these opinions has served to conceal wrongdoing and faulty legal interpretations.¹⁷ This subcommittee has the opportunity to take a step toward addressing this body of secret law by requiring the Department of Justice take the simple step of reporting to the House and Senate Committees on Appropriations and the public a complete list of all final opinions.

We therefore request this subcommittee and the Appropriations Committee include the following legislative language in the fiscal year 2020 Commerce, Justice, Science, and Related Agencies Appropriations Bill and accompanying committee report:

Report to Committee on Office of Legal Counsel Opinions: Not later than 90 days after enactment of this legislation, and every 90 days thereafter, the Department of Justice shall submit to the House Committee on Appropriations and the Senate Committee on Appropriations and publish on its website a report that includes the following:

- (a) A complete list of final OLC opinions currently in effect, where 'final' is defined as:
 - (1) designated by the Attorney General or his designee as final; or
 - (2) government officials or government contractors are following its guidance; or
 - (3) it has been relied upon to formulate current legal guidance; or
 - (4) it is directly or indirectly cited in another final Office of Legal Counsel opinion.
- (b) For each opinion included in (a), the Department of Justice shall include—
 - (1) The signer of the opinion;
 - (2) The recipient identified in the opinion;
 - (3) The date of issuance; and
 - (4) The title of the opinion, subject only to redactions provided for by 5 USC § 552 (b)(1), (b)(3)(A)(i), (b)(6), and (b)(7) and only to the extent the specific interest protected in withholding the information is greater than the public interest in disclosure.¹⁸

We thank the subcommittee for the opportunity to submit this testimony, and urge it to order this report to stave off a growing body of secret law.

[This statement was submitted by Sean Vitka, Policy Counsel.]

PREPARED STATEMENT OF THE ECOLOGICAL SOCIETY OF AMERICA

The Ecological Society of America (ESA) is the Nation's largest society of professional ecologists representing over 10,000 members across the country. We write to urge you to support at least \$5.7 billion in funding for the National Oceanic and Atmospheric Administration (NOAA) for fiscal year 2020.

NOAA continues to serve as the nation's premier environmental intelligence community, supporting U.S. economic growth and job creation, enhancing public safety, and protecting and managing natural resources. We urge you to preserve funding for NOAA and to make strong investments in the agency and its research.

Strong Investments in NOAA Translate to Economic, Ecological, National Security, and Public Health Benefits

Over half of the American population lives along our coasts. NOAA provides critical data and services that are essential to protecting these coastal communities, maintaining coastal economies, and managing our coastal resources. NOAA contributes a range of atmospheric and oceanic data, products, and services that benefit America's economy, quality of life, and scientific competitiveness:

- Timely and accurate National Weather Service forecasts and warnings that reduce vulnerability to extreme weather events.
- Environmental monitoring, analysis, and data that reduce risks to people and property.

¹⁷ <http://www.nytimes.com/2008/04/03/washington/03intel.html>

¹⁸ 5 USC § 552 (b)(1), (b)(3)(A)(i), (b)(6), and (b)(7) are the Freedom of Information Act exemptions for classified information, information prohibited from disclosure by law, personnel and medical files, and records compiled for law enforcement purposes.

- Maintenance and stewardship of valuable coastal and marine resources, including sustainable management of fisheries.
- Innovative geostationary and polar satellite systems that provide essential data and observations.
- Cutting-edge scientific research and development that has led to new technologies and scientific advances.

Fiscal year 2020 Funding for Research and Critical Offices

Programs of importance to the ecological community are NOAA's Office of Oceanic and Atmospheric Research (OAR), the National Ocean Service (NOS), and the National Marine Fisheries Service (NMFS). These offices support intramural and extramural research critical to NOAA's mission of managing marine and coastal resources to meet the Nation's environmental, economic, and social needs.

OAR provides the essential research foundation for NOAA's work. This office supports laboratories and programs across the U.S. and collaborates with external partners, including 16 NOAA-funded Cooperative Institutes and 33 Sea Grant Institutions. OAR research contributes to accurate weather forecasts, enables communities to plan for and respond to climate events such as drought, and enhances the protection and management of the nation's coastal and ocean resources.

NOS and NMFS both play critical roles in the stewardship and management of our nation's natural resources. NOS works to preserve and enhance coastal resources, ecosystems, and economies. NMFS is responsible for the stewardship of our ocean resources, providing the science necessary to sustain and revitalize our fisheries and marine habitats and ecosystems. ESA urges you to provide strong support for these NOAA offices.

Robust Support for NOAA Is Critical to Our Nation's Resilience and Scientific Leadership

NOAA is an essential agency that plays a key role not only in understanding and predicting changes in climate, weather, and oceans, but also in protecting communities and ecosystems. We appreciate your past support for this critical agency, and we urge you, in the interest of ensuring our nation's continued and future resilience and scientific leadership, to continue this support and provide \$5.7 billion for NOAA in fiscal year 2020. Thank you for your consideration of this request.

[This statement was submitted by Catherine O'Riordan, Executive.]

PREPARED STATEMENT OF THE ENTOMOLOGICAL SOCIETY OF AMERICA

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 requests a robust fiscal year 2020 appropriation of \$9 billion for NSF, including strong support for the Directorate for Biological Sciences (BIO).

Research in entomology and other basic biological sciences 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. Basic research on the biology of insects 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 humans. Insects are often ideal laboratory experimental subjects 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 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 break-

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.

through 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, healthcare workers, and scientists.

NSF is the only Federal agency that supports basic research across all scientific and engineering disciplines, outside of the medical 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, including through programs like the NSF Research Traineeship, ensuring that the United States will remain globally competitive in the future.

One program, the NSF Graduate Research Fellowship, selects and supports science and engineering graduate students demonstrating exceptional potential to succeed in science, technology, engineering, and mathematics (STEM) careers. The NSF's Graduate Research Fellowship and Postdoctoral Fellows Programs have also been instrumental in supporting researchers at the forefront of soft robotics and space exploration. Recently, NSF funded several projects focused on soft robots, which are considered the best candidate for strong, mobile robots for exploration of harsh and dangerous environments. NSF funded successful projects to learn from insects to develop innovations in robotics. The results include a "robofly" with biologically inspired sensors for rapid flight stabilization^{2,3} the "RoboBee" project which pioneered an amphibious, micro-scale autonomous robot,⁴ and vision-guided perching robots.⁵ However, much is still unknown about the exact physical and biological mechanisms insects use to sense, move, and navigate through the world. For the United States to continue to be a world leader in robotics innovation, it is critical to fund research on the biology, physiology, and morphology of insects.

Through activities within the BIO Directorate, 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.

One NSF BIO-supported project that illustrates the broad reach of basic entomological research is focused on fundamental insect physiology. The investigators are testing a hypothesis about the mechanism insects use to transport blood, nutrients, and gases throughout their bodies.⁶ Their research on these transport processes will inform our understanding of insects' success as agricultural pests and disease carriers as well as our ability to mitigate those traits. A deeper knowledge of these transport systems will also provide insights into those possessed by other animals and impact the design of new mechanical systems. This investment has already led to the breakthrough discovery of proteins found in carabid beetles with valuable applications in bioengineering and biomedical technology. Carabid beetles are special in their ability to produce caustic chemicals that they spray as a defense mechanism against predators. Due to the toxic nature of these chemicals, carabid beetles must have a way of producing and, more importantly, storing these chemicals without harming their own body. Using novel microscopy techniques, NSF-funded researchers discovered that the gland system that produces, stores, and propels these chemicals is comprised of an elastomeric protein called resilin.⁷ In addition to furthering our understanding of the natural world, the discovery of resilin in carabid beetle caustic chemical secretory glands has biomedical and bioengineering applications due to its impermeability, resistance to chemicals, and flexibility.

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 en-

²Paul Yu Oh. Robotic Insect Flight Stabilization Using Biomimetic Sensors. Award Number: 0412541.

³https://www.nsf.gov/news/news_videos.jsp?cntn_id=138802&media_id=80678&org=NSF.

⁴<https://www.iien.com/product-development/news/20781982/robobees-may-lead-to-autonomous-robotic-insects>.

⁵<https://news.psu.edu/story/532491/2018/08/21/research/mechanical-engineering-faculty-studies-flying-insects-create-better>.

⁶Socha, John; Harrison, Jon; Miller, Laura; and Pendar, Hodjat. A New Hypothesis for Cardio-respiratory Mechanics in Insects. Award Number: 1558052.

⁷<https://www.sciencedirect.com/science/article/pii/S146780391830183X>.

sureing healthier honey bee populations through data analysis and modeling.⁸ 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.

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. 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.⁹ Workshops like this, across numerous disciplines, help ensure the long-term availability of a STEM-trained workforce.

While collections-focused awards like that mentioned above are encouraging, ESA is concerned by the continued downward trend of Federal funding 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. This uncertainty has previously prompted the suspension of the NSF Collections in Support of Biological Research (CSBR), which supports scientifically valuable collections that contribute to domestic homeland security, public health, agriculture and food security, and environmental sustainability. ESA recognizes that technological development is spurring substantive discussion about the future of biological collections, but given their continuing relevance and broad application, ESA firmly supports continued Federal investment in these collections.

Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, ESA supports an overall fiscal year 2020 NSF budget of \$9 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 over 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 Robert K.D. Peterson, President.]

PREPARED STATEMENT OF THE FEDERATION OF AMERICAN SOCIETIES FOR
EXPERIMENTAL BIOLOGY

NATIONAL SCIENCE FOUNDATION

The Federation of American Societies for Experimental Biology (FASEB) respectfully requests a minimum of \$9.0 billion in fiscal year 2020 for the National Science Foundation.

⁸Symes, Ellie. SBIR Phase I: Data Analytics on Honeebee Hives Using IoT Sensor Data. Award Number: 1746862.

⁹Song, Hojun and Shockley, Floyd. Towards a Sustainable Management of Insect Collections in the U.S. through the Entomological Collections Management Workshop. Award Number: 1640919.

With its broad mandate to support fundamental research across all fields of science, engineering, and mathematics, the National Science Foundation (NSF) is the cornerstone of our Nation's scientific enterprise.¹ NSF investments in discovery-based research at institutions nationwide generate new knowledge, which in turn leads to transformative innovations that enhance quality of life.

Web browsers, modern weather forecasting, and magnetic resonance imaging (MRI) are just a few of the tangible benefits enabled by NSF-funded research.^{2,3}

Many of these advances result from NSF's relationship to other scientific agencies such as the National Institutes of Health (NIH). For example, in the biological sciences, NSF supports research that expands our understanding of life at multiple scales of time and space, from molecules to ecosystems.³ This fundamental knowledge is then applied to advance medicine, enhance agriculture, stimulate new technologies, and protect our health and environment. For example, NSF supported 2018 Nobel-prize winning research that led to the development of directed enzyme evolution, a revolutionary technology now used to produce pharmaceuticals, biofuels, and pesticide alternatives.⁴

NSF is uniquely positioned to support interdisciplinary collaboration, research facilities, and scientific resources to meet national challenges. By harnessing expertise and technology from across the sciences, NSF-supported research is crucial in safeguarding our national security and addressing the effects of global warming.

NSF also has a critical educational mission. The Foundation's graduate and postdoctoral fellowships and other educational programs underwrite the training of thousands of young scientists and engineers. This investment ensures a technical and scientific workforce capable of pursuing research and leading the innovative, dynamic industries of the future.

Even as the demand for scientific research has dramatically grown, the NSF budget has remained flat in real terms for 15 years (Figure 1). The Federal Government must renew its commitment to fundamental, discovery-based science.⁵ Providing NSF with a budget of \$9.0 billion (\$925 million above fiscal year 2019⁶) would support about 1,000 additional research grants, enabling researchers to rapidly seize new scientific opportunities.

¹ <https://www.nsf.gov/about>

² *Transforming the World Through Science*. National Science Foundation, Alexandria, VA

³ *NSF Sensational 60*. National Science Foundation, Alexandria, VA

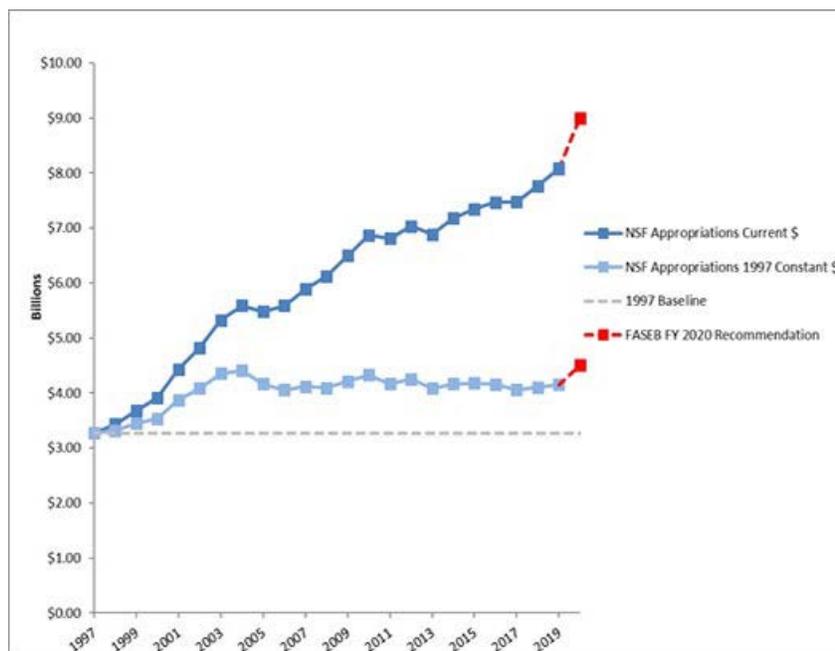
⁴ *Celebrating 2018 Nobel Laureate Frances Arnold*, National Science Foundation, Alexandria, VA

⁵ *Innovation: An American Imperative*

⁶ H.J.Res.31—Consolidated Appropriations Act, 2019

FASEB FISCAL YEAR 2020 RECOMMENDATION: AT LEAST \$9.0 BILLION FOR NSF

Figure 1: NSF Appropriations, Fiscal Year 1997–2020



[This statement was submitted by Benjamin H. Krinsky, Associate Director for Legislative Affairs.]

PREPARED STATEMENT OF THE FEDERATION OF ASSOCIATIONS IN BEHAVIORAL &
BRAIN SCIENCES

NATIONAL SCIENCE FOUNDATION FISCAL YEAR 2020 APPROPRIATIONS

Chairman Moran, Ranking Member Shaheen, and Members of the subcommittee:

The Federation of Associations in Behavioral and Brain Sciences (FABBS) appreciates the opportunity to submit testimony for the record in support of the National Science Foundation budget for fiscal year 2020. FABBS represents 23 scientific societies and nearly 60 university departments whose members and faculty share a commitment to advancing knowledge of the mind, brain, and behavior. Understanding the human element of our most pressing challenges through research in these sciences will improve the welfare of our Nation, our society, and our people. Fundamental research funded by the NSF helps to create a body of knowledge and build future generations of scientists whose work will be essential to keep this country at the forefront of discovery. As a member of the Coalition for National Science Funding, FABBS joins the broader scientific community in urging Congress to fund the NSF at \$9 billion in fiscal year 2020.

Our members sincerely thank the CJS Appropriations Subcommittee for the final budget level for the NSF in fiscal year 2019, a significant and deeply needed increase over fiscal year 2018. While we recognize that the subcommittee worked diligently to pass a timely budget for the NSF, we feel obligated to mention the wastefulness of the extended shut down. We thank you in advance for your efforts to complete the fiscal year 2020 budget before the end of the fiscal year. Together with our sister scientific societies, we have and will continue to bring attention to the devastating effects of shutting down the NSF.

In addition to continually strengthening core research to generate discovery and train and inspire those individuals doing the discovering, the NSF funds critical in-

infrastructure to sustain and grow the Nation's scientific enterprise. We applaud the NSF for encouraging interdisciplinary collaboration and innovation and continued progress of its Big Ideas and Convergence Accelerators and agree strongly with their position that funding for these new initiatives cannot come at the expense of continued increased funding for core discipline research in any of the research directorates. Indeed, the National Science Board has estimated that in fiscal year 2017, nearly \$1.6 billion in grants evaluated by the NSF merit review process to be "outstanding" were left unpursued due to lack of funding. We are, potentially, in a period of tremendous growth and discovery. We need to be thinking about attracting the next generation to build upon the knowledge that this country needs to address its priorities in national security, defense, health, education, economics, and more.

This committee has expressed a commitment to maintaining U.S. leadership status in science and technology in an increasingly competitive global economy. However, the NSF has not received the same budget increases as other major research agencies during the same time period. Furthermore, funding for the NSF has remained stagnant at a time period when we are seeing rapid growth in Federal investment in research and development from our global competitors. Increasing Federal support for the NSF is vital in order to ensure our future competitiveness.

While we write in support of the top line number for NSF, FABBS members have a particular interest in the Directorate for Social, Behavioral, and Economic (SBE) Sciences. FABBS members also appreciate critical funding from the Computer and Information Science and Engineering (CISE) and Biological Sciences (BIO) Directorates as well as the Education and Human Resources (EHR) Directorate.

The SBE directorate provides an estimated 62 percent of the Federal funding for fundamental research in SBE sciences at academic institutions across the country. This means that our finest universities and colleges are heavily dependent on the NSF to inform discoveries from identifying vulnerabilities in the Nation's cyber-networks to improving early detection and treatment of brain disorders such as autism and Alzheimer's. The discoveries fueled by fundamental SBE research provide a foundational understanding of human thought, feeling, and behavior that is critical for making advances in several of the NSF's Big Ideas—including Harnessing the Data Revolution, the Future of Work at the Human-technology Frontier, and building an inclusive community of STEM learners (NSF INCLUDES). An increase in the NSF's 2020 budget would allow the agency to continue funding core disciplinary research, as well as invest in the Big Ideas.

We recognize the pressing need to raise the budget caps. Accordingly, we have been working in collaboration with the broad scientific society, as well as with Federal, State and local colleagues, in health, education, and hundreds of other groups affected by non-defense discretionary funding to encourage members of Congress to raise the caps so that we can complete the budget process keep our government working.

Increasing Federal investment in fundamental scientific research across all sciences is critical to ensuring the prosperity, security and health of our Nation and its people. Thus, we urge you to provide the National Science Foundation with \$9 billion for fiscal year 2020. Increased funding for fundamental scientific research would help set the NSF on a solid path with potentially transformative benefits to the country.

Thank you for considering this request.

FABBS MEMBER SOCIETIES

American Educational Research Association, American Psychological Association, Association for Applied Psychophysiology and Biofeedback, Association for Behavior Analysis, Behavior Genetics Association, Cognitive Science Society, International Society for Developmental Psychobiology, Massachusetts Neuropsychological Society, National Academy of Neuropsychology, The Psychonomic Society, Society for Behavioral Neuroendocrinology, Society for Computers in Psychology, Society for Judgment 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: Development Psychology; APA Division 28: Psychopharmacology and Substance Abuse; Arizona State University; Binghamton

University—Psychology; Boston College—Psychology; Boston University—Psychology; California State University at Fullerton—Psychological and Brain Sciences; Carnegie Mellon University—Psychology; Columbia University—Psychology; Cornell University—Psychology; Duke University—Psychology and Neuroscience; Florida State University—Psychology; Georgetown University—Psychology; George Washington University—Psychology; Georgia Institute of Technology—Psychology; Harvard University—Psychology; Indiana University Bloomington—Psychology; Indiana University Purdue University Indianapolis—Psychology; Johns Hopkins University—Psychological and Brain Sciences; Kent State University—Psychological Sciences; Lehigh University—Psychology; New York University—Psychology; Northwestern University—Psychology; Ohio State University—Center for Cognitive and Brain Sciences; Pennsylvania State University—Psychology; Princeton University—Psychology; Purdue University—Psychological Sciences; Rice University—Psychology; Southern Methodist University—Psychology; Stanford University—Psychology; Syracuse University—Psychology; Temple University—Psychology; University of Arizona—Psychology; University of California at Berkeley—Psychology; University of California at Davis—Psychology; University of California at Irvine—Psychology; University of California at Los Angeles—Psychology; University of California at Riverside—Psychology; University of California at San Diego—Psychology; University of Chicago—Psychology; University of Cincinnati—Psychology; University of Delaware—Psychological & Brain Sciences; University of Houston—Psychology; University of Illinois at Urbana—Champaign—Psychology; University of Iowa—Psychological and Brain Sciences; University of Maryland at College Park—Psychology; University of Massachusetts at Amherst—Psychological and Brain Sciences; University of Michigan—Psychology; University of Minnesota—Psychology; University of Minnesota—Institute of Child Development; University of North Carolina at Greensboro—Psychology; University of Pennsylvania—Psychology; University of Pittsburgh—Psychology; University of Texas at Austin—Psychology; University of Texas at Dallas—School of Behavioral and Brain Sciences; University of Virginia—Psychology; University of Washington—Psychology; Vanderbilt University—Psychological Sciences; Virginia Tech—Psychology; Wake Forest University—Psychology; Washington University in St. Louis—Psychology

[This statement was submitted by Juliane Baron, Executive Director.]

PREPARED STATEMENT OF THE FRIENDS OF THE CHILDREN
SUPPORT OF THE YOUTH MENTORING GRANT

On behalf of the Friends of the Children national network, comprised of 17 locations in 10 States, I thank Chairman Jerry Moran and Ranking Member Jeanne Shaheen for the opportunity to provide testimony in support of a critical Federal investment in America's young people. My testimony will focus on the Youth Mentoring Program housed in the Office of Juvenile Justice and Delinquency Prevention (OJJDP) at the Department of Justice (DOJ). Friends of the Children respectfully requests that your committee invest at least \$120 million in the Youth Mentoring Program in fiscal year 2020. This investment will make it possible for quality, evidence-based mentoring organizations, like Friends of the Children, to increase our impact by serving more of our Nation's most at-risk children and youth, breaking cycles of poverty and violence and empowering them to change their life trajectories.

Friends of the Children Overview

Friends of the Children is a \$26 million network serving over 2,100 youth and caregivers in 10 States across the country. Headquartered in Portland, Oregon, our sites are all independent non-profit organizations, and are located in Boston, Chicago, Charlotte, New York (Harlem and the Bronx), Tampa, Austin, San Francisco, Los Angeles, Fargo, Vancouver and Seattle Washington, and Portland, Gresham, Klamath Falls, and Bend Oregon.

The mission of Friends of the Children is to break the cycle of generational poverty by giving the most vulnerable children the ability to create a new story. We select children ages 4–6 who are at risk of entering, or who are already in, the foster care system and pair them with a salaried, professional mentor (a Friend) who stays with them from kindergarten through graduation—12½ years, no matter what.

Children who qualify for the Friends of the Children program are selected using a research-based, behavioral risk and protective factor assessment that aligns with the child welfare/foster care intake processes. Youth who qualify have disproportionately experienced Adverse Childhood Experience (ACE) factors before they join our

program in kindergarten: 85 percent experience three or more ACE factors in their lifetime, and over half experience six or more.

Our 26-year history has proven that trained, professional mentors who make long-term, 12+ year commitments can change the life trajectories of children who have been exposed to compounded risk factors.

- 83 percent of our youth graduate high school, although 60 percent have parents who did not have the supports they needed to graduate;
- 93 percent avoid the juvenile justice system, although 50 percent have parents who were incarcerated;
- 98 percent avoid early parenting, although 85 percent were born to a teen parent; and
- 92 percent go on to enroll in college, serve our country, or join the workforce.

These outcomes translate into economic savings for the community. The Harvard Business School Association of Oregon study on Friends of the Children found that every \$1 invested in Friends of the Children yields more than \$7 in return to the community in savings.

Closing the Mentoring Gap for Youth Impacted by the Opioid Crisis

While mentoring is proven to be an effective, evidence-based intervention and prevention strategy for young people experiencing the greatest challenges, more youth need our help than we are able to serve.

Since 2015, OJJDP has invested \$4.5M into expansion of the Friends of the Children model. By leveraging that \$4.5M into over \$26 million of public and private funding, our network expanded the geographic scope of our services by 60 percent in the last 3 years and is poised to expand the number of youth served by over 20 percent in the next 2 years.

However, even with that increased growth in service and impact, we still aren't able to meet the demand for our services. Right now, for example, there are 26,000 5-year-old children in foster care who could thrive with the support of a Friend. In 2016, parental substance abuse contributed to 34 percent of all child removals nationwide. In 2017, the rate of children entering foster care due to parental substance abuse rose for the 6th consecutive year—a 53 percent increase since 2007. There is a correlation between such removals and the rise in opioid addiction. One study found a 30 percent increase in opioid overdoses between 2016 and 2017 across 45 States. Adults living in poverty, ages 18–25 (the age of most Friends of the Children parents), are the most likely demographic group to become addicted and die from opioid pain relievers.

Both incarceration of a parent and parental substance abuse are common Adverse Childhood Experiences for children served by Friends of the Children, especially our youth experiencing foster care. Each have also been linked to generational cycles of addiction, where children of incarcerated parents or those who have substance abuse challenges are in turn more likely to be impacted by the justice system or suffer from addiction in adolescence and adulthood.

Currently, OJJDP Youth Mentoring Program funds are supporting Friends of the Children to break these cycles for over 2000 youth nationwide, but thousands more need our help.

Unfortunately, the Youth Mentoring Program is now the only remaining Federal grant exclusively dedicated to providing funds for evidence-based mentoring. Without adequate resources and funding, mentoring programs—and ultimately America's young people—do not have access to the caring adults they need to develop healthy, safe and productive lives. This request in support of at least \$120 million for the Youth Mentoring Program will allow more young people to have access to the important social, professional, and academic opportunities that all of America's youth deserve. The Youth Mentoring Program demonstrates a sound and effective investment in evidence-based programs that work, and will have definitive and measureable impact on closing the mentoring gap in America.

Thank you again for this opportunity to provide testimony in support of this critical Federal resource that creates a better future all of us by investing in the potential and promise of America's young people.

[This statement was submitted by Terri Sorensen, Chief Executive Officer.]

PREPARED STATEMENT OF THE GEOLOGICAL SOCIETY OF AMERICA
 NATIONAL SCIENCE FOUNDATION AND NATIONAL AERONAUTICS AND SPACE
 ADMINISTRATION

SUMMARY

The Geological Society of America (GSA) supports strong and sustained investments in geoscience research and education at the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA). We thank Congress for the investments made in fiscal year 2019 and encourage a path of sustainable growth forward. We encourage Congress to appropriate \$9 billion for NSF in fiscal year 2020 and fully support geoscience research at the agency without restriction. We request \$7.5 billion in fiscal year 2020 to fund NASA's Science Mission Directorate with increased funding for the 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. Earth and space science at these two agencies play a vital role in American prosperity and security through 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 global professional society with a growing membership of 23,000 individuals. GSA provides access to elements essential to the professional growth of earth scientists at all levels of expertise and from all sectors: academic, government, business, and industry.

NATIONAL SCIENCE FOUNDATION

The Geological Society of America (GSA) appreciates the increase to the National Science Foundation (NSF) budget in fiscal year 2019 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 \$9 billion in fiscal year 2020 and reject the cuts proposed in the administration's request.

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. According to the *2018 Science and Engineering Indicators Report*, the U.S. now ranks 11th in the world in research and development intensity. Increases in funding will allow NSF to continue to fund its core basic research in addition to growing investments in its "Ten Big Ideas". These 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 should be funded without restriction. NSF's Directorate for Geosciences is the largest Federal supporter of basic geoscience research at universities. NSF's programs in geoscience research and graduate and undergraduate student support contribute significantly to the education and training of the workforce. A recent report by the American Geosciences Institute, *Status of Recent Geoscience Graduates 2017*, illustrates 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 investments in NSF's geoscience portfolio are necessary to address such issues as natural hazards, energy and minerals, water resources, and education; geoscience is a key contributor to groundbreaking research across disciplines at NSF. Specific needs include:

—On December 20, 2017, President Trump signed an executive order entitled *A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals*, that finds,

"The United States is heavily reliant on imports of certain mineral commodities that are vital to the Nation's security and economic prosperity. This dependency of the United States on foreign sources creates a strategic vulnerability for both its economy and military to adverse foreign govern-

ment action, natural disaster, and other events that can disrupt supply of these key minerals.”

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. Earth and space observations provide data necessary to predict severe space weather events, which affect the electric power grid, satellite communications and information, and space-based position, navigation, and timing systems.
- 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 megaeearthquakes, 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?
- Natural hazards—including floods, earthquakes, tsunamis, volcanic eruptions, wildfires, and landslides—are a major cause of fatalities and economic losses. Recent natural disasters provide unmistakable evidence that our nation remains vulnerable to staggering losses. An improved scientific understanding of geologic 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.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

GSA requests \$7.5 billion to fund NASA’s Science Mission Directorate (SMD) and increased funding for the 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 2019 for Earth Science Missions, and request that Congress continue their funding in fiscal year 2020. 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 us 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.

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 re-

cently, 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. Increased NSF and NASA investments in Earth science education are necessary to meet these workforce needs and develop an informed, science-literate population.

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 have inspired and led many into science careers. GSA fully supports these efforts, as well as programs to make the geoscience workforce more diverse.

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 GREAT LAKES INDIAN FISH AND WILDLIFE COMMISSION

DEPARTMENT OF JUSTICE

Program Involved

COPS Tribal Resources Grant Program (TRGP) Hiring and Equipment/Training Program under the Coordinated Tribal Assistance Solicitation (CTAS)

Summary of GLIFWC’S Fiscal Year 2020 Testimony

GLIFWC supports sustained funding for the TRGP at no less than the fiscal year 2019 enacted funding level. This program has enabled GLIFWC to solidify its communications, training, and equipment requirements, essential to ensuring the safety of GLIFWC officers and their role in the proper functioning of interjurisdictional emergency mutual assistance networks providing public safety in the treaty ceded territories.



Ceded Territory Treaty Rights and GLIFWC'S Role

GLIFWC was established in 1984 as a "Tribal organization" within the meaning of the Indian Self-Determination Act (Public Law 93-638). It exercises authority delegated by its member Tribes to implement Federal court orders and various inter-jurisdictional agreements related to their treaty rights. GLIFWC assists its member Tribes in:

- securing and implementing treaty guaranteed rights to hunt, fish, and gather in Chippewa treaty ceded territories; and
- cooperatively managing, restoring and protecting ceded territory natural resources and their habitats.

For 35 years, Congress and various administrations have funded GLIFWC through the BIA, the Department of Justice and other agencies to meet specific Federal obligations under: (a) a number of U.S./Chippewa treaties; (b) the Federal trust responsibility; (c) the Indian Self-Determination and Education Assistance Act, the Clean Water Act, and other legislation; and (d) various court decisions, including a 1999 U.S. Supreme Court case, that affirmed the treaty rights of GLIFWC's member Tribes. Under the direction of its member Tribes, GLIFWC operates a ceded territory hunting, fishing, and gathering rights protection/implementation program through its staff of biologists, scientists, technicians, conservation enforcement officers, and public information specialists.

Community-based Policing

GLIFWC's officers carry out their duties through a community-based policing program. The underlying premise of that program is that effective detection and deterrence of illegal activities, as well as education of the regulated constituents, are best accomplished if the officers work within the Tribal communities they primarily serve. The officers are based in reservation communities of the following member Tribes: in Wisconsin—Bad River, Lac Courte Oreilles, Lac du Flambeau, Red Cliff, Sokaogon Chippewa (Mole Lake), and St. Croix; in Minnesota—Mille Lacs; and in Michigan—Bay Mills, Keweenaw Bay and Lac Vieux Desert. To help develop mutual trust between GLIFWC officers and Tribal communities, officers provide outdoor skills workshops and safety classes (hunter, boater, snowmobile, ATV) to over 1,100 Tribal youth in grades 4–8 annually. GLIFWC's officers also actively participate in summer and winter youth outdoor activity camps, kids fishing events, workshops on canoe safety and rice stick carving, and seminars on trapping and archery/bow safety.

GLIFWC's member Tribes realize it is critical to build relationships between Tribal youth and law enforcement officers as a means of combatting gang recruitment and drug/alcohol abuse in reservation communities. GLIFWC is continuing to take a pro-active approach to support these efforts by obtaining fiscal year 2013 DOJ funding to hire a Youth Outreach Officer. This Officer is working, with a team of officers, to improve and expand youth outdoor recreation activities in partnership with other GLIFWC officers. In addition, GLIFWC has appointed a second officer responsibilities in regard to development and implementation of youth programs to meet growing demands for community policing interaction with Tribal youth. The program's goal is to build and expand these relationships to help prevent violations of Tribal off-reservation codes, improve public safety and promote an outdoor lifestyle as an alternative to a lifestyle characterized by youth gangs¹ and substance abuse.² The availability of the Youth Outreach Officer has enabled GLIFWC, in partnership with the U.S. Forest Service, to grow participation in Camp Onji-Akiing (From the Earth). The camp began with just 9 Tribal students in grades 5–8 and by 2018 expanded to 52 Tribal students in grades 5–8, 8 Tribal Junior Counselors (i.e. high school students) and 1 Tribal Junior Director (i.e. high school graduate enrolled in college).

Interaction with Law Enforcement Agencies

GLIFWC's officers are integral members of regional emergency services networks in Minnesota, Michigan and Wisconsin. They not only enforce the Tribes' conserva-

¹The American Indian and Alaska Native (AI/AN) youth population is more affected by gang involvement than any other racial population. 15 percent of AI/AN youth are involved with gangs compared to 8 percent of Latino youth and 6 percent of African American youth nationally. (National Council on Crime and Delinquency: Glesmann, C., Krisberg, B.A., & Marchionna, S., 2009).

²22.9 percent of American Indian and Alaska Native (AI/AN) youth aged 12 and older report alcohol use, 18.4 percent report binge drinking and 16.0 percent report substance dependence or abuse. In the same group, 35.8 percent report tobacco use and 12.5 percent report illicit drug use. (2010 National Survey on Drug Use and Health: Summary of National Findings).

tion codes, but are fully certified officers who work cooperatively with authorities from other jurisdictions when they detect violations of State or Federal criminal and conservation laws. These partnerships evolved from the inter-governmental cooperation required to combat the violence experienced during the early implementation of treaty rights in Wisconsin. As time passed, GLIFWC's professional officers continued to provide a bridge between local law enforcement and many rural Indian communities.

GLIFWC remains at this forefront, using DOJ funding to develop interjurisdictional legal training that is attended by GLIFWC officers, Tribal police and conservation officers, Tribal judges, Tribal and county prosecutors, and State and Federal agency law enforcement staff. DOJ funding has also enabled GLIFWC to certify its officers as medical emergency first responders, and to train them in search and rescue, particularly in cold water rescue techniques. When a crime is in progress or emergencies occur, local, State, and Federal law enforcement agencies look to GLIFWC's officers as part of the mutual assistance networks. In fact, the role of GLIFWC's officers in these networks was further legitimized in 2007 by the passage of Wisconsin Act 27, which affords GLIFWC wardens the same statutory safeguards and protections that are afforded to their DNR counterparts. GLIFWC wardens now have access to the criminal history database and other information to identify whom they are encountering in the field so that they can determine whether they are about to face a fugitive or some other dangerous individual.

GLIFWC's participation in mutual assistance networks located throughout a 60,000 square mile region increases public safety in an effective and cost efficient manner. In 2018, GLIFWC officers utilized prior DOJ funded training and equipment to respond to:

- Seven incidents where officers responded to emergency backup requests from other law enforcement agencies including: (1) assistance in serving a high-risk felony warrant from Oneida County, Wisconsin; (2) assisting Michigan State Police with a well-being check; (3) assisting in traffic control on U.S. Highway 2 during flooding; and (4) assisting Barron County Sheriff's Department with a large search for potential evidence from a double homicide and kidnapping;
- Seven accidents including one with a school bus, car/deer collisions and flood related accidents that occurred in Bayfield County;
- Six search and rescue operations including a missing Tribal member where GLIFWC officers utilized a GLIFWC owned Remotely Operated Vehicle (Drone) to conduct an aerial search and to photograph the area, and a missing 15-year-old from Lac Vieux Desert in which GLIFWC officers worked with Gogebic County Sheriff's Deputies, Michigan State Patrol Troopers, and multiple K9 teams to successfully rescue the youth;
- Two medical calls including responding to a finger amputation and an elderly person in Washburn, Wisconsin; and
- One interagency body recovery operation on Pokegama Lake in Lac Du Flambeau.

Increased Versatility and Improving Public Safety.—In addition to supporting GLIFWC participation in mutual assistance networks, DOJ training and equipment proved critical in building partnerships to improve public safety on Lake Superior. Ghost nets are commercial fishing nets that have been damaged due to Lake Superior's strong storms or vandalism and have sunk to the bottom of a lake. These lost gill nets can pose navigation hazards and damage equipment. In 2015, GLIFWC utilized DOJ Tribal COPS funding to purchase equipment to address this public safety concern and in 2016 removed around 8,000 feet of ghost nets from Lake Superior, in 2017 GLIFWC removed around 8,700 feet of ghost nets and in 2018 GLIFWC removed around 7,035 feet of ghost nets. GLIFWC also formed a partnership with Wisconsin Sea Grant and the Apostle Islands Sport Fishermen's Association, and obtained funding from the Marine Debris Program to sponsor a series of public workshops to educate commercial and Tribal anglers on best net-management practices, build community relationships and further expand GLIFWC's Community Policing outreach efforts.

Looking to the Future

In 2017, a GLIFWC officer, performing a routine investigation during a deer shining incident, discovered a case that the suspect had dropped out of their vehicle. The case contained a medical rubber band, syringes, and a substance in a plastic bag. The officer turned the paraphernalia over to county deputies who were on scene and the suspect was placed under arrest.

GLIFWC member tribes have not escaped the opioid and methamphetamine crisis gripping much of the United States. Wisconsin has experienced a 335 percent

growth in neonatal abstinence syndrome (NAS) from 2006 to 2014 from 2.0 to 8.7 per 1,000 live births³ and counties with reservation communities have the highest per capita NAS rates in the State. GLIFWC is a member of the Wisconsin Native American Drug and Gang Initiative (NADGI) Task Force and has participated in training under a Memorandum of Agreement.

Methamphetamine remains a significant problem throughout the Chippewa ceded territories in Minnesota, Wisconsin and Michigan including in tribal communities. GLIFWC is also engaged in ongoing discussions with the U.S. Forest Service on developing strategies on how best to approach and counter with this pervasive regional problem.

[This statement was submitted by Michael J. Isham, Executive Administrator.]

PREPARED STATEMENT OF THE HUMAN FACTORS AND ERGONOMICS SOCIETY
SCIENCE AND RESEARCH FUNDING AT THE NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION AND NATIONAL SCIENCE FOUNDATION

On behalf of the Human Factors and Ergonomics Society (HFES), we are pleased to provide this written testimony to Senate Appropriations Subcommittee on Commerce, Justice, and Science, and Related Agencies for the official record. HFES urges the subcommittee to provide \$9 billion for the National Science Foundation (NSF) and \$22.575 billion for the National Aeronautics and Space Administration (NASA) in the fiscal year 2020 appropriations process.

HFES and its members believe strongly that investment in scientific research serves as an important driver for innovation and the economy, national security, and for maintaining American global competitiveness. 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.

THE VALUE OF HUMAN FACTORS AND ERGONOMICS SCIENCE

HFES is a multidisciplinary professional association with over 4,500 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.

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 decisionmaking, 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 decisionmaking, 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 healthcare sector, to the ways we travel, to the hand-held devices we use every day.

HUMAN FACTORS AND ERGONOMICS AT THE NATIONAL SCIENCE FOUNDATION

HFES and its members believe strongly that Federal investment in NSF will have a direct and positive impact on the U.S. economy, national security, and the health

³When opioids or other substances are used during pregnancy, the infant may be born with withdrawal from substances taken by the mother. This condition, termed neonatal abstinence syndrome (NAS), is associated with physiologic and behavioral consequences, such as low birth weight, feeding difficulties and respiratory problems. Select Opioid—Related Morbidity and Mortality, Data for Wisconsin, November 2016, WI Dep. of Health Services.

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. HFES also supports the Foundation's dedication to its "10 Big Ideas,"¹ including the *Future of Work at the Human-Technology Frontier (FW-HTF)*, which seeks to address and improve human-technology interactions as workplaces integrate and adapt to artificial intelligence, automation, machine learning, and beyond. 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.²
- Improve understanding of the relationship between science and engineering, technology, and society, in order to advance the adoption and use of technology.³
- Inform decisionmaking in engineering design, control, and optimization to improve individual engineering components and entire systems.⁴

HUMAN FACTORS AND ERGONOMICS AT THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

HF/E is a critical enabler of NASA science, aeronautics, and human spaceflight missions. Through the Human Research Program,⁵ NASA and external HF/E practitioners conduct research on the design and procedures that influence most, if not all, aspects of astronaut and mission control performance. This crucial role is necessary for the Agency to ensure safety and efficiency in complex systems with narrow risk parameters.

The practical applications of HF/E will only become more pronounced as NASA looks to expand the horizon of human exploration. With the United States planning to send humans beyond Earth orbit, unique challenges will arise that necessitate an increased reliance on HF/E research. Long duration missions with the potential for delayed Earth communications will require systems and procedures designed to guarantee safe operation of autonomous systems. This and other issues were highlighted in the *National Aeronautics and Space Administration Transition Authorization Act of 2017*,⁶ wherein Congress required NASA to take into consideration HF/E research outcomes in the mandated *Human Exploration Roadmap*.

CONCLUSION

Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, HFES supports an overall fiscal year 2020 NSF budget of \$9 billion and a NASA budget of \$22.575 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 Kermit Davis, President, and Steven C. Kemp, Executive Director.]

¹National Science Foundation-proposed "10 Big Ideas" (https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf)

²Decision, Risk & Management Sciences (DRMS) Program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423)

³Science, Technology, and Society (STS) Program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5324)

⁴Systems Engineering and Design Cluster (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13473)

⁵NASA Human Research Program (<https://www.nasa.gov/hrp>)

⁶National Aeronautics and Space Administration Transition Authorization Act of 2017, Sec. 432(b)(3)(J) (<https://www.congress.gov/115/bills/s442/BILLS-115s442enr.pdf>)

PREPARED STATEMENT OF THE HUMANE SOCIETY OF THE UNITED STATES
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND THE MARINE MAMMAL
 COMMISSION BUDGET

Thank you for the opportunity to submit testimony on fiscal year 2020 funding priorities for the National Oceanic and Atmospheric Administration and the Marine Mammal Commission. On behalf of the Humane Society of the United States and the Humane Society Legislative Fund, I urge the subcommittee to include the following requests in the fiscal year 2020 appropriations bill.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Office of Protected Resources

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Protected Resources (OPR) is charged with protecting marine mammals under the Marine Mammal Protection Act as well as endangered and threatened marine species under the Endangered Species Act. As summarized in the fiscal year 2017 NOAA Congressional Justification, OPR's mission is to "assess, understand, and protect the health of protected species, the ecosystems that sustain them, and the communities that value and depend on them." The program, in partnership with internal and external stakeholders, uses best available science to develop and implement best practices and conservation actions to reduce threats to protected species and their marine and coastal ecosystems.¹ OPR's work is vital to ensuring the conservation of marine mammals and listed marine species.

Regarding marine species and the ESA, the OPR is tasked with, in part, responding to listing petitions to determine if species warrant listing under the ESA, meeting statutory deadlines regarding listings, designating critical habitat, developing recovery plans and interagency consultations. Without the necessary resources to undertake these tasks, the existing backlog of species awaiting consideration will continue to increase, imperiled species will continue to decline and we are at potential risk of driving species to extinction.

Additionally, under both the MMPA and ESA, the OPR works to assess and monitor marine species populations and stocks and conduct research on marine species to help inform management decisions. As OPR is the premiere Federal agency tasked with undertaking this type of work on marine species, it would be detrimental to making management decisions if estimates on populations and stocks were no longer updated and key population research could not be conducted. For instance, if updated population information is not available, management decisions to aid recovery and assess the potential for delisting from the ESA would not be possible.

OPR issues permits and authorizations that may result in take of protected species. These permits and authorizations help ensure that impacts of activities is minimal to marine species. The ability to process these permits and authorizations in a timely matter is contingent on having the resources to do so.

The President's fiscal year 20 budget request ask for a net decrease of \$13,496,000, eliminating in part \$2,599,000 in funding to the ESA and MMPA permitting division and \$4,000,000 by abolishing the John H. Prescott Marine Mammal Rescue Assistance Grant Program. See below for further discussion. *We urge the OPR to be fully funded at \$200,012,000 in order to ensure proper resources and adequate personnel are available for the conservation and management of marine mammals and listed marine species.*

John H. Prescott Marine Mammal Rescue Assistance Grant Program

The John H. Prescott Marine Mammal Rescue Assistance Grant Program (Prescott Grant Program) provides competitive grants to marine mammal stranding network organizations to rescue, rehabilitate, or investigate sick, injured, or distressed live marine mammals, and investigate the events surrounding and determine the cause of death or injury to marine mammals. Over the past 18 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. Citizens have come to expect that there will be a response to calls for

¹ https://www.commerce.gov/sites/default/files/2019-04/FY2020_NOAA_Congressional-Budget-Justification.pdf at NMFS-6.

experts to come and rescue animals in obvious trouble. However, without funding to the Prescott grant program, these local networks cannot afford to assist the National Marine Fisheries Service to fulfill its congressional mandate to “compile and analyze, by region, to monitor species, numbers, conditions, and cause of illnesses and deaths of stranded marine mammals.” 16 U.S.C. § 1421a(b)(3).

The President’s fiscal year 2020 budget request zeroed out funding to this program in hopes that private entities will fund such efforts. It is improper and against clear congressional intent to have this program zeroed out. *We urge the Prescott Grant Program to be fully funded at \$4 million.*

North Atlantic Right Whale-Related Research and Development

One of NMFS’ 2019 priorities is to “investigate and develop measures to mitigate threats to the recovery of North Atlantic right whales.” However, the President’s fiscal year 2020 budget request eliminates \$1 million in funding provided by Congress last year to further this priority. There are less than 420 North Atlantic right whales left in the world. deserves our full. The greatest threats to the survival of right whales are fishing gear entanglements and vessel strikes. 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. Ships also collide with right whales, causing deaths or serious injuries, such as blunt force trauma, propeller cuts, and broken bones. Given the dire situation of this species and NMFS stated 2019 priority, *we request \$5 million in funding for North Atlantic right whale-related research and development for fiscal year 2020.*

MARINE MAMMAL COMMISSION

The Marine Mammal Commission plays a key role in the conservation of marine mammals. An independent Federal agency established by Congress in the Marine Mammal Protection Act, the three Commissioners—experts on marine mammals—are appointed by the President and confirmed by the Senate. The Commissioners are supported by the Committee of Scientific Advisors on Marine Mammals, a special advisor on Alaskan Native Affairs, and 14 staff. The Commission provides independent, science-based oversight of U.S. policies, international policies, and the actions of Federal agencies regarding human impacts on marine mammals and their ocean environment.

The Commission undertakes a range of activities to ensure that protections for marine mammals—whales, dolphins, seals, sea lions, walruses, sea otters, polar bears, and manatees—are as effective as possible, and as efficient as possible. It works with the regulatory agencies and stakeholders to identify and fill research needs, providing grant funding when possible for research that addresses information gaps and identifies regulatory approaches that are more tailored. For example, studies have shown that a modest increase in resources to support marine mammal data collection can result in more targeted regulatory measures and reduced financial impact on commercial fishermen. The Commission also seeks to ensure that the ability of Alaska Natives are able to meet their subsistence needs through hunting of marine mammals.

The administration seeks to eliminate the Commission for the second year in a row. For fiscal year 2019, Congress recognized the Commission’s important oversight function and funded the Commission at \$3.43 million- the same amount it has received since fiscal year 2015. However, since the Commission has absorbed significant fixed costs since fiscal year 15, the discretionary funding has decreased, drastically impacting the work the Commission is able to accomplish. *We urge the Commission to be funded at \$5.25 million in fiscal year 2020 to help restore the Commission’s key oversight role in conserving marine mammals.*

[This statement was submitted by Keisha Sedlacek, Director of Regulatory Affairs, Humane Society Legislative Fund.]

PREPARED STATEMENT OF THE INNOCENCE PROJECT

On behalf of the Innocence Project, 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 2019. Thank you also for allowing me to submit written testimony for the record as you consider budget requests for fiscal year 2020. I urge you to robustly fund the following programs at the Department of Justice and

the National Institute of Standards and Technology at the Department of Commerce, including:

- \$10 million for the Wrongful Conviction Review Program at the Department of Justice (DoJ), Bureau of Justice Assistance (*the Wrongful Conviction Review Program is a part of the Capital Litigation Improvement Program*);
- \$10 million for the Kirk Bloodsworth Post-Conviction DNA Testing Program at the DoJ, National Institute of Justice (NIJ);
- \$30 million for the Coverdell Forensic Sciences Improvement Grant Program at NIJ;
- \$4.2 million to support forensic science standards setting activities at the National Institute of Standards and Technology (NIST);
- \$15 million for NIST to support forensic science research and measurement science.

These innocence and forensic science programs increase the accuracy and fairness of the criminal justice system, provide the strongest possible forensic science tools to justice system stakeholders, and generate greater public safety for our Nation.

National Registry of Exonerations data 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 to receive funding in 2008 and 2009, respectively. This dramatic increase in the number of exonerations is in part a result of the Federal decision to invest in these programs to help ensure the accuracy and integrity of the criminal justice system. In the 20 years prior to the initiation of innocence program funding (from 1989 to 2008), the rate of exonerations was much lower. In 2016, the number of exonerations was at its peak at 171 exonerations, and in recent years exoneration totals have been approximately 150 per year—or on average, more than 12 exonerations per month. These effective program outcomes show the power and need to invest in Federal innocence and forensic science programs.

The Midwest Innocence Project has had incredible success in Kansas where our work has resulted in the exoneration of three clients in the past 4 years. One of those clients, Floyd Bledsoe, served 16 years in a Kansas prison before a Jefferson County judge vacated his convictions in December 2015 based in part on new DNA testing evidence. Floyd was convicted of first-degree murder, aggravated kidnapping, and aggravated indecent liberties for the shooting death of his 14-year-old sister-in-law. The DNA test results led to the identification of the actual perpetrator, Floyd's brother, and a co-conspirator in disposing the body, Floyd's father. In 2017, Richard Jones and Lamonte McIntyre were both exonerated by non-DNA evidence after the Midwest Innocence Project and our partners proved that investigators used improper practices when investigating the cases, resulting in their wrongful convictions. Richard served over 18 years for aggravated assault during a purse snatching he did not commit because of improper eyewitness identification practices. Lamonte served over 23 years for double-homicide that occurred when he was just 17 due to the misconduct of both the investigating detective and the prosecutor. These examples demonstrate the long, complex, and resource intensive process often required to overturn a wrongful conviction, and inspire us to identify, remediate and prevent other wrongful convictions.

Freeing innocent individuals and preventing wrongful convictions through reform 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 almost half of the first 350 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 over 360 individuals in the United States have been exonerated through DNA testing, including 20 who served time on death row. These innocents served an average of 14 years in prison before exoneration and release. 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 enhance the accuracy of criminal investigations, strengthen criminal prosecutions, and result in a stronger, fairer system of justice that provides true justice to 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 over 2,400 exonerations since 1989—over 360 of which were based primarily on 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 cases and support the significant legal work they require. The Wrongful Conviction Review Program has contributed to 34 exonerations over the past 3 years.

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 are both to alleviate burdens placed on the criminal justice system through costly and prolonged post-conviction litigation and to identify, whenever possible, the person who actually committed the crime.

In recent years, only 5–10 percent of local innocence organizations received Wrongful Conviction Review funding during each grant cycle. To continue and expand this important work, we urge you to provide \$10 million for the Wrongful Conviction Review Program in fiscal year 2020. (Please note the Wrongful Conviction Review Program is a part of the Capital Litigation Improvement Program.)

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, and grantees range from State and local prosecutor offices to law enforcement agencies and crime labs. These grantees can collaborate with local innocence organizations when appropriate. For example, a Bloodsworth grant to Arizona allowed the State's Attorney General's Office to partner with the Arizona Justice Project to create the Post-Conviction DNA Testing Project. This effort canvassed the Arizona inmate population, reviewed cases, located evidence, and filed joint requests with the court to have evidence released 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."¹

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 51 wrongfully convicted persons in 14 States. The person who actually committed the crime was identified in 13 of those cases. 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, we urge you to provide \$10 million to continue and expand the work of the Bloodsworth Post-Conviction DNA Testing Program in fiscal year 2020.

THE COVERDELL PROGRAM

The Coverdell Program provides State and local crime laboratories and medical examiner offices with much needed Federal funding to carry out forensic testing and analysis both efficiently and effectively. As forensic science budgets find themselves severely stretched in many States and localities as a result of the opioid epidemic, and as Federal bodies recommend the implementation of new policies, standards, and guidelines, the Coverdell program funds are critical to ensure that crime labs can function well and produce accurate and reliable results.

Additionally, in recognizing the need for independent government investigations in the wake of allegations of forensic negligence or misconduct, Congress created the forensic oversight provisions of the Coverdell Program to help ensure the integrity of and public confidence in forensic evidence. Specifically, Congress requires that a State or unit of local government shall submit to the Attorney General certification that a government entity exists and an appropriate process is in place to conduct independent external investigations into allegations of serious negligence or misconduct substantially affecting the integrity of the forensic results committed by employees or contractors of any forensic laboratory system, medical examiner's office, coroner's office, law enforcement storage facility, or medical facility in the State that will receive a portion of the grant amount.

As the program supports both the capacity of crime labs to process forensic evidence and the essential function of ensuring the integrity of forensic investigations

¹ Arizona receives Federal DNA grant, <http://community.law.asu.edu/news/19167/Arizona-receives-Federal-DNA-grant.htm> (last visited Mar. 13, 2012).

in the wake of serious allegations of negligence or misconduct, we urge you to provide \$30 million for the Coverdell Program in fiscal year 2020.

FORENSIC SCIENCE IMPROVEMENT

To continue the critical work to improve forensic science, and help prevent wrongful convictions, we urge you to provide the following amounts in fiscal year 2020 for forensic science improvements, including:

- \$4.2 million directed to the National Institute of Standards and Technology (NIST) at the Department of Commerce to support forensic science technical standards development, including \$3 million to support the Organization of Scientific Area Committees (OSAC) and \$1.2 million to support technical merit evaluations.
- \$15 million for NIST to support forensic science research and measurement science.

As the Federal entity that is both perfectly positioned and institutionally constituted to conduct measurement science and foundational research in support of forensic science, 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*.² 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.

The OSAC is seen by many as the most significant Federal forensic science initiative in recent years. State and local forensic scientists, who conduct the vast majority of forensic science casework, are in strong support and are significantly involved in this effort. In order for a standard to qualify for the registry that the OSAC maintains, it must demonstrate that it is technically sound. Some forensic science methods have not yet received an evaluation of their technical merit and NIST needs further support to conduct these vital reviews. At a time when public safety and national security are some of our Nation's top priorities, it is imperative that Congress invest in scientific tools that support these endeavors. The forensic science activities and research at NIST will help greatly to improve forensic disciplines and propel forensic science toward greater accuracy and reliability.

CONCLUSION

Thank you so much for your leadership in helping to ensure the accuracy, integrity, and reliability of our Nation's criminal justice system. We urge you to support all of the aforementioned programs, including the Wrongful Conviction Review; Bloodsworth; Coverdell; and NIST forensic science programs. If you have any questions, or need additional information, please contact Jenny Collier, Federal Policy Advisor to the Innocence Project at jcollier@colliercollective.org.

[This statement was submitted by Tricia Bushnell on behalf of the Innocence Project, and as a member of the Innocence Network.]

PREPARED STATEMENT OF THE JAMESTOWN S'KLALLAM TRIBE

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 2020 Department of Justice and Department of Commerce Budgets. Our Budget Request endorses the requests and recommendations of the Northwest Indian Fisheries Commission, the Pacific Salmon Commission and the National Congress of American Indians. Failure to fully fund public safety and justice in Indian country has undermined Tribal sovereignty and the ability of Tribal governments to protect their citizens and communities. American Indians/Alaska Natives suffer from the Nation's highest rates of crime and victimization as documented by the Department of Justice (DOJ) and U.S. Commission on Civil Rights. Based on recent appropriations, the Bureau of Indian Affairs (BIA) is funding law enforcement at 20 percent of need, detention at 40 percent of need and courts at 3 percent of need. Insufficient base funding has many Tribes relying on short-term competitive grants to try and address a portion of the funding shortfall. Honoring the Federal trust obligation requires substantial investment in public safety and justice in Indian country.

²National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. Washington, DC: The National Academies Press, 2009. doi:10.17226/12589, p. 22–23.

TRIBAL SPECIFIC—DEPARTMENT OF JUSTICE/DEPARTMENT OF COMMERCE

1. Provide Recurring Base Funding for Tribal Justice Programs
2. Hold Indian Country Harmless from Budgetary Reductions, Rescissions, and Sequestration
3. Data Collection to Support Funding Requests

REGIONAL REQUESTS AND RECOMMENDATIONS—DEPARTMENT OF COMMERCE

Support the fiscal year 2019 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 \$20.3 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 5 percent (5 percent) set aside
5. Fund COPS Program—\$52 million

TRIBAL SPECIFIC REQUESTS

1. Provide Recurring Base Funding for Tribal Justice Programs

Stable funding at sufficient levels is essential for viable and effective Tribal justice institutions. Grant funding is, at best, a short term investment that is used to support the ongoing and critical Tribal justice needs. Although we appreciate the intent of the Department in developing the CTAS to streamline the grant process and provide Tribes a tool for quick access and reference to funding that is specifically available to Tribes, competitive grants do not work well as the main funding source. The time limitation leads to instability, the administrative burden on Tribes remains excessive, the lack of flexibility creates challenges to addressing justice needs, funding is insufficient, and the CTAS application process is highly competitive, tedious, and complex and there are many restrictions imposed on how Tribes may use the funds. Base funding coupled with more flexibility would allow for more effective and efficient use of the Federal dollar and stronger Tribal justice systems.

2. Hold Indian Country Programs Harmless from Budgetary Reductions, Rescissions and Sequestration

Decades of unfulfilled Federal obligations has devastated Tribal communities who continue to face persistent shortfalls and overwhelming unfulfilled Federal obligations as documented by the U.S. Civil Rights Commission 2018 Report: Broken Promises Continuing Federal Funding Shortfall for Native Americans. Sequestration, reductions and rescissions further exasperate an already precarious budget situation undermining the Tribes ability to maximize program operations and their ability to provide basic services to our citizens. In addition, many of these reductions are permanent rescissions and the cumulative effect over the years has critically impacted Tribal communities. Until Tribes attain exclusive taxing jurisdiction within their Tribal lands, Federal support remains critical to ensure the delivery of essential governmental services to our Tribal citizens. The Federal trust obligation must be honored and vital programs and services for Tribes must be sustained and held harmless in any budgetary deal enacted to reduce the national deficit.

3. Improve Data Collection to Support Tribal Funding Requests

Data is critical to support Tribal policy goals, implementation of programs and services, managing impacts of the Federal investment and community planning for program success. Accurate data can capture the community needs and guide Tribal investments resulting in efficient and effective use of resources and strong Tribal justice systems. However, there is a lack of available data and data gathering throughout the Federal agencies. OMB and the Agencies should work together with Tribes to develop uniform measures that track Federal spending for Native American programs and services and that capture the unfulfilled Federal obligations.

REGIONAL REQUESTS AND RECOMMENDATIONS

1. \$110 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS)

The fiscal year 2018 appropriations provided a total of \$65.0 million. These funds have decreased from the peak of \$110.0 million in fiscal year 2002. The Tribes' overall goal in the PCSRF program is to restore wild salmon populations while the key objective is to protect and restore important habitat in Puget Sound and along the Washington coast. These funds support policy and technical capacities within Tribal resources management to plan, implement, and monitor recovery activities.

2. \$18.3 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)

The Pacific Salmon Commission (PSC) establishes fishery regimes, develops management recommendations, assesses 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

3. \$20.3 million for the Mitchell Act Hatchery Program (NOAA/NMFS)

Funding is provided for the operation and maintenance of hatcheries that release between 50 and 60 million juvenile salmon and steelhead in Oregon and Washington. This program has historically provided fish production for Tribal treaty and non-Tribal commercial and recreational fisheries in the Columbia River, and also contributes to ocean fisheries from Northern California to Southeast Alaska.

NATIONAL REQUESTS AND RECOMMENDATIONS DEPARTMENT OF JUSTICE

1. Fully Fund the Tribal Law and Order Act (TLOA)

The Tribal Law and Order Act 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. Funding is needed to implement the comprehensive and improved measures that were enacted to address the public safety crisis in Tribal communities. The entire Tribal justice system is dependent on this funding to carry out law enforcement, court, and detention functions, and to provide rehabilitation and preventive services. Tribal justice systems are the cornerstone that paves the way for economic development and Tribal self-sufficiency.

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 assist victims of domestic violence. Funding for Tribal governments is derived from other OVW Programs and combined into a single source called the "Grants to Tribal Governments Program". Therefore, it is imperative to Tribes that these other programs receive full funding so the Tribal grant program will, in turn, receive full funding. The root cause of these high rates of violence was a justice system that forced Tribal governments to rely on distant Federal, and in some cases, State officials to investigate and prosecute incidences of domestic violence committed by non-Natives against Native women. The statistics on violence against Native women show that outside law enforcement has proven ineffective in addressing these crimes of violence. Between 2005 and 2007, U.S. Attorneys declined to prosecute nearly 52 percent of violent crimes that occurred in Indian country; and 67 percent of cases declined were sexual abuse related cases. It is unconscionable to force Tribes to submit to a system of justice that declines to prosecute over half the criminal cases brought before it and leaves our Native women without judicial recourse.

3. Office of Justice Programs (OJP)—Provide a 10 percent Tribal Set-Aside for all (OJP) Programs and Allow for Greater Flexibility

The Office of Justice Program (OJP) provides funding to Tribes to address public safety and criminal justice needs in Indian communities. We are advocating for a 10 percent Tribal set-aside to allow for a more flexible grant structure for Tribes to complement the Coordinated Tribal Assistance Solicitation (CTAS) grant. Although Congress and the administration have taken steps in recent years to try and address some of these concerns through the passage of the Tribal Law and Order Act (TLOA) of 2010 and the Reauthorization of the Violence Against Women Act (VAWA) of 2013, significant funding is needed in order to implement these new authorities to address the crisis level need in Indian country and elevate the safety

and wellness of our Tribal citizens and communities. Tribal court systems are evolving to meet the increasing demands of Tribal communities and ensure that Tribal citizens are provided with adequate legal representation and protection. Under TLOA and VAWA Tribal courts are required to expand judicial services and meet certain costly thresholds, including, providing public defenders, recording criminal proceedings, and retaining legally trained and licensed Tribal judges. Without adequate funding for Tribal court systems, decisions to arrest, prosecute and detain will be based on financial restraints rather than in the best interest of public safety. Stable funding for Tribal courts is a prerequisite to ensure a safe, healthy and thriving Tribal community.

4. Increase the Funding Caps and Create a Permanent Five Percent (5 percent) Tribal Set-Aside for Victims of Crime Act Funding

We commend Congress for providing a 3 percent set aside for Tribes in the Victim of Crimes Fund in the fiscal year 2018 and fiscal year 2019 Budget. We request that a similar Tribal set aside is included in the fiscal year 2020 appropriations. Congress created the Crime Victims Fund in 1984 with the idea that money collected from those who commit crimes should be used to assist those that have been victimized. Each year, the fund is financed by the collection of funds, penalties and bond forfeitures from defendants convicted of Federal crimes. It is important to note that the fund receives no tax payer dollars. DOJ disburses funds to States and other entities. Crime victimization rates on Tribal lands have been estimated as much as 250 percent higher than the national rate and the rate of murder of American Indian/Alaska Native women on some reservations are 1000 percent higher than the national average. Tribal governments, like State governments, are responsible for addressing the needs of victims in their communities. Despite the devastating rates of victimization in Tribal communities, Indian Tribes have largely been left out of the fund. Indian Tribes are only able to access these dollars through State pass through grants or very limited short term competitive DOJ grants. However, many States do not provide funds to Tribes for victim services and the vast majority of Tribes are unable to access these funds at all. Tribes are again requesting a Tribal set-aside of 5 percent of the VOCA funds. .

5. Fund the COPS Program—\$52 million

The COPS Office provides funding to Tribes for law enforcement officers. The funding can also be used for training, equipment, vehicle, and technology. There is a great need for additional law enforcement officers throughout Indian country but limited resources has led to inadequate funding for justice systems, specifically, in the area of hiring, retention and training of law enforcement officers. It is imperative for the safety of Tribal citizens and surrounding communities that a significant increase in funding is allocated for Tribal law enforcement officers and programs.

I would like to extend my thanks to the subcommittee for an opportunity to submit testimony on the fiscal year 2020 Appropriations for DOJ and DOC.

[This statement was submitted by W. Ron Allen, Tribal Chairman/CEO.]

PREPARED STATEMENT OF THE JOINT OCEAN COMMISSION INITIATIVE

Chairman Moran, Ranking Member Shaheen, 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 2020 Commerce, Justice, Science, and Related Agencies appropriations bill. We are deeply appreciative of the comprehensive funding that you provided to ocean priorities in the fiscal year 2019 Omnibus. We recognize the difficulty of allocating resources in these challenging fiscal times and we laud your decision to support key ocean accounts despite the administration's short-sighted proposed cuts to core ocean and coastal programs.

For fiscal year 2020, we are again facing a long list of accounts that would be eliminated or severely hamstrung by the President's Budget, including bedrock staples such as Sea Grant, Coastal Zone Management Grants, ocean observations, ocean acidification, and fisheries management. If enacted, these cuts would undermine our investments and compromise our ability to address the ongoing impacts of a changing climate, protect and promote economic development, safeguard our citizens, and responsibly balance the use of our oceans and coasts.

The Joint Ocean Commission Initiative (Joint Initiative) is a collaborative, bipartisan effort to catalyze action and monitor progress toward meaningful ocean policy reform. We believe that a continued commitment to protecting base funding and

core programs at NOAA, NSF, and NASA is an investment that will save lives, protect national security, grow our economy, and preserve the health of our oceans and coasts. Ocean observations play a critical role in maintaining our undersea superiority and ocean and coastal resources provide fundamental goods and services, including food, minerals, transportation, medicines, tourism, and recreational opportunities. In 2015, the ocean economy contributed more than \$320 billion to the GDP and directly supported over 3.2 million jobs, many of which were located in coastal counties. Moreover, ocean and coastal environments are often the first line of defense when it comes to promoting resilience and protecting American communities from severe weather events.

Based on the need for significant and sustained investment to invigorate public-private partnerships and energize national, regional, State, and local initiatives, we strongly support increasing NOAA's overall budget to a minimum of \$6.5 billion, NSF's overall budget to a minimum of \$9 billion, and NASA Earth Science's budget to a minimum of \$2.1 billion. We believe the recommendations articulated 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. The Joint Initiative is highly appreciative of progress the subcommittee has made in providing resources to essential ocean and coastal accounts, and we urge you to continue supporting these priorities.

RESEARCH, EXPLORATION, AND OBSERVATION

A critical component of America's economic, military, and diplomatic power lies in its ocean science, research, education, exploration, monitoring, 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.

Observation and monitoring programs, as well as other scientific and data programs, are integral to NOAA's ability to accurately forecast weather. They are central for NOAA's protection and management of America's coastal and 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 \$550 million to NOAA's Office of Oceanic and Atmospheric Research (OAR) and \$53 million to NOAA's Sustained Ocean Observations and Monitoring Program. We also suggest the committee allocate \$50 million for the Ocean Exploration program to maintain the pace, scope, and efficiency of exploration. NOAA's Ocean Exploration program has a long history of bipartisan support and has greatly contributed to our knowledge of the ocean, largely by utilizing supporting infrastructure such as ships, moorings, buoys, and autonomous underwater vehicles, and computational and data management hardware. It is also critical to fund climate research at OAR at no less than \$160 million to promote high-priority climate science that advances our understanding of Earth's climate system and foster the application of this research in risk management and adaptation efforts.

In addition, we recommend allocating \$9 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 you allocate \$2.1 billion in funding for NASA's Earth Science Division to improve national capabilities to predict climate, weather, and natural hazards, and better manage national resources.

It is essential that Congress provide the operational and maintenance support necessary to keep research, monitoring, and exploration infrastructure functioning, and to facilitate its modernization. In combination with remote sensing, ocean observation infrastructure has helped to establish and maintain the long-term in-situ data sets that are essential to safeguarding U.S. assets and understanding changes in physical, chemical, and biological processes. These data sets have generated vital tools that support the American economy and environment. Maintaining U.S. research and development infrastructure is critical to our long-term economic competitiveness.

EDUCATION AND EXTENSION

The National Sea Grant College Program works to better understand, conserve, and utilize America's coastal resources, making it critical to coastal states, communities, and economies. Sea Grant works to extend the findings of marine and coastal research to impact American livelihoods. For example, Sea Grant programs support fisheries and aquaculture business development and help Americans plan for and

respond to extreme weather events. We are alarmed by the President's proposal to eliminate funding for Sea Grant, and we urge this committee to secure the benefits that Sea Grant provides by allocating \$93.5 million to Sea Grant in fiscal year 2020.

Likewise, we are equally alarmed by the elimination of funding for environmental education and ocean stewardship at NOAA. We urge the committee to provide \$12 million for the Bay-Watershed Education and Training (B-WET) program and \$8 million for Environmental Literacy Programs (ELP), which are essential for STEM education and encouraging environmental stewardship.

RESILIENCE AND SECURITY

Variability in oceanographic and atmospheric conditions, coupled with demographic changes that increasingly crowd our coasts, make the impact of storms and flooding events more severe. Changing weather and charged geopolitical relationships heighten the already serious need for ocean and coastal security. Ocean and coastal communities must be safeguarded and made more resilient. Congress took a pioneering first step with the fiscal year 2018 Omnibus by authorizing \$30 million for the National Ocean and Coastal Security Fund (NOCSF), and built upon this work by authorizing another \$30 million for the NOCSF in fiscal year 2019. We ask this subcommittee to continue leading on ocean and coastal security by allocating \$50 million for the NOCSF in fiscal year 2020. We further recommend that a portion of this funding continue to support critical ocean partnerships that encourage collaboration and data sharing on the regional scale. In addition, we recommend a total allocation of \$80 million to Coastal Management Grants and a minimum allocation of \$28 million for the National Estuarine Research Reserve System in fiscal year 2020. These programs, eliminated in the administration's budget, 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 \$600 million. NOS funding supports economy boosting programs that ensure safe and efficient transportation and commerce; preparedness and risk reduction; and stewardship, recreation, and tourism. 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. Moreover, the National Centers for Coastal Ocean Science provides coastal managers with the scientific information they need to protect public health, preserve valued habitats, and foster sustainable community interaction with coastal ecosystems. In addition, NOS supports the Integrated Ocean Observing System (IOOS), which plays an instrumental role in collecting and distributing data that is used at the national, regional, State, and local levels.

The NOS is also responsible for administering the Office of National Marine Sanctuaries and a range of restoration projects that dramatically enhance the resilience of coastal communities and ocean environments. It is worth noting that these investments pay serious economic dividends: National Marine 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, every dollar invested in strengthening coastal communities against storm surge mitigates four dollars in losses. 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 having major impacts on economies worldwide. By changing the chemistry of seawater, ocean acidification endangers shellfish, corals, and other marine life that form calcium shells or skeletons and disrupts marine food webs. In the United States, ocean acidification poses a fundamental risk to our fisheries and aquaculture industries. Left unresolved, ocean acidification will exact a substantial toll on the world's economies and diminish our capacity to nourish growing populations. We strongly urge you to allocate a minimum of \$50 million for NOAA's Integrated Ocean Acidification program. Funding the Integrated Ocean Acidification program at elevated levels will 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

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 cre-

ating and maintaining sustainable fisheries domestically and internationally. Much of this progress can be credited to your Subcommittee's commitment to scientifically-sound fishery management and the tireless efforts of U.S. fishermen, regional fishery management councils, state commissions, scientists, and managers.

However, America's fisheries are currently facing unprecedented challenges including changing ocean conditions, impacts from land-based activities, shifts in historic stock distributions, increasingly complex data requirements, and a rapidly growing recreational fishing sector. Globally, illegal, unreported, and unregulated (IUU) fishing remains a threat to fisheries sustainability worldwide. NOAA Fisheries requires elevated funding to address these numerous challenges. For example, better science and real-time data can improve the quality of management decisions and provide regional management councils with more tools to assess the current status of fish stocks. To protect America's fisheries and the jobs that rely on them, we recommend allocating \$1.1 billion to the National Marine Fisheries Service to fully implement the Magnuson-Stevens Fishery Conservation and Management Act. This should include the ability to improve the coastal infrastructure on which fisheries depend and address threats that changing conditions pose. 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.

CONCLUDING REMARKS

The Joint Initiative greatly appreciates your commitment to stretching scarce resources to address the challenges of our maritime Nation. We thank you for the substantial funding allotted to ocean priorities in fiscal year 2019, and we appreciate your consideration of our fiscal year 2020 request. We will continue to track progress on key ocean and coastal programs and accounts in fiscal year 2020 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	Margaret Leinen
The Honorable Norman Mineta	The Honorable Jane Lubchenco
Frances Beinecke	Julie Packard
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The Honorable Norm Dicks	The Honorable Pietro Parravano
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Scott Gudes	The Honorable William Ruckelshaus
The Honorable Conrad Lautenbacher	Paul Sandifer

PREPARED STATEMENT OF KARL ANDERSON, DIRECTOR OF GOVERNMENT RELATIONS
ON BEHALF OF THE AMERICAN SOCIETY OF AGRONOMY, CROP SCIENCE SOCIETY OF
AMERICA, AND SOIL SCIENCE SOCIETY OF AMERICA

NATIONAL SCIENCE FOUNDATION

The American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA), represent over 18,000 scientists in academia, industry, and government, over 13,500 Certified Crop Advisers (CCA), and more than 700 Certified Professional Soil Scientist (CPSS). We are the largest coalition of professionals dedicated to the agronomic, crop and soil science disciplines in the United States.

In the coming decades, our agricultural system must sustainably produce food and fuel for a rapidly growing global population. The Nation's economic prosperity and security depend on our dedication to developing innovative, science-based solutions to address the challenges facing our food system. The ASA, CSSA, and SSSA appreciate the appropriations that that National Science Foundation (NSF) received in fiscal year 2018 and 2019. Yet, as our Nation's farmers face increasing extreme weather and market uncertainty, NSF's programs become even more important providers of the science they need to stay in business. NSF's Big Ideas initiatives, its core programs that sustain research infrastructure, and its unparalleled support for STEM students and the future STEM workforce require increased investment.

We support \$9 billion for the National Science Foundation in fiscal year 2020 appropriations.

This funding level will put the premier government-funding agency for scientific research on track to address farmers' challenges by increasing the broad knowledge base supported by a wide range of scientific disciplines, such as biology, plant science, chemistry and soil science.

Within NSF we are very supportive of *Innovations at the Nexus of Food, Energy, and Water Systems*. There is a pressing need to understand the interconnectedness of food, energy and water. Of particular interest is the production, resilience, safety, and security of food, energy, and water resources. Continuing droughts and hurricanes in the U.S. and the corresponding impacts on water, food production and the energy sector is an example of these challenges.

We urge you to include report language highlighting the importance of this effort and the need to better understand the fundamental science behind the interconnected food-energy-water system.

Science is essential. A strong commitment to federally funded scientific research will boost the Nation's capacity for innovation, agricultural productivity and economic prosperity.

We appreciate the opportunity to provide written testimony and look forward to working with the subcommittee as it considers funding for the National Science Foundation. Thank you.

PREPARED STATEMENT OF THE MONTEREY BAY AQUARIUM

The Monterey Bay Aquarium is pleased to submit this statement in support of increased funding for the National Oceanic and Atmospheric Administration (NOAA) within the fiscal year 2020 Commerce-Justice-Science Appropriations Act. The Aquarium recognizes NOAA's critical role in serving as the Nation's lead science agency and information provider on oceanic and atmospheric matters. NOAA's work supports millions of American businesses and citizens through its science, stewardship and safety mission every day of the year. 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 provide the environmental intelligence to guide decisionmaking about the health of the coupled ocean and climate systems.

The Aquarium is grateful for the subcommittee's support of NOAA in the fiscal year 2019 Consolidated Appropriations Act, including programs to address illegal, unreported and unregulated (IUU) fishing, marine debris, and continue NOAA research and education programming. For fiscal year 2020, we urge the subcommittee to continue its balanced and strategic investment strategy for NOAA, including restoration of the extramural ocean and coastal research, conservation, and education programs proposed for either elimination or drastic reduction by the administration. In addition, and importantly, we urge the subcommittee to enhance funding within NOAA Fisheries for both Illegal, Unreported, and Unregulated (IUU) Fishing and highly migratory species research, specifically Management Strategy Evaluation for Pacific bluefin tuna.

The mission of the Monterey Bay Aquarium is to inspire conservation of the ocean. We carry out this mission by providing an educational experience that connects over 2 million visitors per year to some of the most striking species and ecosystems on our planet. The Aquarium uses exhibits and educational programs to demonstrate the connection between the ocean and our human existence—from the air we breathe to the weather patterns and resources that drive our multi-billion-dollar blue economy. The Aquarium's strategic conservation priorities are aimed at addressing some of the most pressing challenges to ocean health, including those posed by plastic pollution, unsustainable fisheries and aquaculture, threats to ocean wildlife and special places, and the ocean impacts of climate change and acidification. Like NOAA, science underpins our approach to ocean conservation challenges, and we seek a collaborative approach that encourages partnerships with the private sector, governments, academia and other stakeholders. The Aquarium's Conservation and Science programs are working on significant policy issues that impact ocean health both here and around the world. We bring decades of expertise and relationships in ocean science, policy, and markets to the task, and we use our voice as a trusted source of ocean information to make a difference globally—among policymakers, the business community, and with individuals. Our priorities are well aligned with NOAA's mission and programs, and future progress on these critical topics will rely on NOAA's continued ability to provide robust data, management expertise, and services to the public and partners. In particular, NOAA ensures the

U.S. remains a global leader in sustainable fisheries under the Magnuson-Stevens Act and provides the science needed to engineer lasting solutions to ocean threats. The enhanced funding requests below are intended to support US leadership on ocean policy around the world.

Illegal, Unreported, and Unregulated (IUU) Fishing/Seafood Traceability.—Global losses attributable to IUU fishing are estimated to be between \$10 and \$23 billion annually, and has links to other forms of criminal activity, as well as slavery and human rights abuses. IUU fishing also undermines economic opportunities for legitimate fishermen in the U.S. and has global implications for national security and food security. In recent years, Congress has provided new authorities and funding to fight IUU fishing. These bills passed with broad bipartisan support, highlighting the importance of these activities to American businesses, consumers and the public.

A key portion of IUU activities is NOAA's implementation of the Seafood Import Monitoring Program (SIMP). In April 2018, NOAA lifted its stay on shrimp and abalone in SIMP, and at the end of the year it became mandatory for foreign shrimp (the top U.S. seafood import) and abalone imports to be accompanied by harvest, landing and chain of custody records as part of compliance with SIMP. However, shrimp and abalone have been in a period of "informed compliance" from December 31, 2018 through April 1, 2019 to allow importers to phase in the new requirements. NOAA continues to work toward full implementation and optimization of SIMP. Additional funding is needed to ensure full and effective implementation of SIMP, including adding shrimp and abalone to the program, as well as increased port inspections, enforcement and supply chain audits that are critical to ensure compliance.

The Aquarium urges the subcommittee to provide at least an additional \$5 million beyond the administration's request for activities to address IUU fishing in fiscal year 2020. The funding will ensure strong implementation of the Seafood Import Monitoring Program in 2020, as well as improved international enforcement and port security responsibilities under the SAFE Ports Act. These funds will improve the ability of the Federal Government to identify, inspect and enforce against imported IUU products coming into U.S. commerce and will enhance efforts to incentivize foreign compliance with international laws.

Pacific Bluefin Tuna.—Pacific bluefin tuna, a highly migratory species, are critical to California's economy and key top predator in the ocean. The population has been depleted to 3.3 percent of historic size—the lowest of all commercially harvested tunas globally. Pacific bluefin tuna are managed through international agreements, and the U.S. has been a leader in advocating to recover the species to sustainable levels, consistent with the Magnuson-Stevens Act (MSA). In 2017 the U.S., working with Aquarium experts and the U.S. recreational sector, secured an international agreement to recover the population to sustainable levels by 2034—a major achievement. However, in the coming year, achieving this hard-won recovery plan is at risk if countries do not follow a precautionary approach and decide to increase quotas, exacerbating the existing overfishing problem.

The U.S. has been a leader in advocating for strong science to guide management and recovery of Pacific bluefin tuna to sustainable levels. A key part of the solution is to bring scientists, managers and stakeholders together through a process called Management Strategy Evaluation (MSE). MSE has been identified globally as an optimal "next-generation" fishery management process to build consensus and support for science-based management in international highly migratory species, particularly tunas. Importantly, the MSE process will improve the ability to meet the needs of U.S. stakeholders and ensure population recovery. Funding to increase NOAA's MSE scientific capacity would enhance the U.S. negotiating position, increase transparency and position the U.S. to lead MSE for other valuable tunas and highly migratory species.

In the last 2 years, the Commerce, Justice, Science Appropriations Act Report emphasized Atlantic and Gulf of Mexico highly migratory species issues, but unfortunately did not similarly recognize the key threats in the Pacific. Pacific tuna fisheries are in dire need of attention in the face of increasing pressure from non-U.S. fishing vessels and interests, especially the iconic Pacific bluefin tuna. We need to maintain a strong management presence and scientific authority on this issue to prevent weakening of the recovery plan and ensure this pattern does not spread to other U.S. key tuna species and fisheries in the Pacific.

We request the subcommittee to increase funding within NOAA Fisheries by \$1 million over fiscal year 2019 to prioritize and add MSE capacity, including for Pacific bluefin tuna, and to allocate resources for highly migratory species research equitably among the regions. In addition, we urge the subcommittee to call on NOAA Fisheries to provide resources to support continued engagement by the Pacific Fish-

ery Management Council to position the U.S. in the international negotiations and ensure progress on the Pacific bluefin tuna recovery plan.

Marine Debris.—Our ocean is at increasing risk from growing levels of plastic pollution. Studies estimate that an average of eight million metric tons of plastic enter the global ocean each year. Unless we curb the flow, this number is expected to double by 2025, which poses a growing risk to water quality, wildlife and human health. NOAA's Marine Debris program offers competitive grants for aquariums and others to work with Federal, State, and local partners on marine debris education and reduction projects. The Monterey Bay Aquarium has previously received \$52,306 from this program for our Ocean Plastic Pollution Summit for Teachers. Over 100 pre-K to 12th grade teachers from throughout California have participated in the Summit and follow-up activities, learning how to use the issue of ocean plastic pollution to engage their students in marine conservation and science. We request support for the NOAA Marine Debris Program of at least \$10 million in fiscal year 2020.

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 engage cutting edge research to address challenging ocean-related issues is dependent on a vibrant ocean science and technology enterprise. Through NOAA and the other relevant agencies, including NSF and NASA, the Aquarium recommends the subcommittee provide support that will address the research challenges contained in the National Academies' *Sea Change* and in *Science and Technology for America's Oceans: A Decadal Vision* published last year by the interagency subcommittee on Ocean Science and Technology.

There are a number of other important NOAA programs that make important contributions to the vitality of our U.S. economy, our communities and way of life. We urge the subcommittee to support the following programs:

Ocean Education.—We urge the subcommittee to reject the administration's plan to terminate NOAA education programs and request \$20 million for the NOAA Education Program, including funding to maintain the Environmental Literacy Grants Program (including ocean education grants), and \$12 million for the Bay, Watershed, Education and Training Program.

Bycatch Reduction.—We recommend the subcommittee include at least \$2.5 million for bycatch reduction competitive grants to non-Federal researchers for the development and implementation of practical bycatch solutions that support sustainable U.S. fisheries.

Marine Aquaculture.—We request that the subcommittee fund NOAA's marine aquaculture programs within NOAA Fisheries and in the Office of Oceanic and Atmospheric Research (OAR) through the Sea Grant Program at least at \$12 million and \$15 million, respectively.

National Marine Sanctuaries and National Monuments.—We request the subcommittee fund Sanctuaries and Marine Protected Areas at \$57 million within NOAA's ORF account in NOS, and \$8.5 million for Marine Sanctuaries Construction within NOAA's PAC account. In addition, we request sufficient funding to support Papahānaumokuākea, Rose Atoll and New England Coral Canyons marine national monuments.

John H. Prescott Marine Mammal Rescue Assistance Grant Program.—We call on the subcommittee to reject the administration's proposal to terminate the program, and fund the program at \$4 million.

NOAA Coastal Resilience Grants (Title IX).—We request that the subcommittee support NOAA Coastal Resilience Grants at \$35 million to prepare for and recover from extreme weather events, climate hazards and changing ocean conditions.

NOAA National Sea Grant College Program.—We urge the subcommittee to reject the administration's proposal to terminate the Sea Grant Program, and provide \$93.5 million.

Thank you for your consideration of these requests and look forward to working with you to ensure strong support for these important ocean research and conservation programs.

[This statement was submitted by Ms. Margaret Spring, Chief Conservation Officer.]

PREPARED STATEMENT OF THE NATIONAL AMERICAN INDIAN COURT JUDGES ASSOCIATION

On behalf of the National American Indian Court Judges Association (NAICJA), this testimony addresses important programs in the Department of Justice and Department of Commerce. Specifically, NAICJA joins the National Congress of American Indians (NCAI) in requesting:

Agency and Program	NCAI Fiscal Year 2020 Request
DOJ: Tribal Grants—Eliminate competitive grant funding process and utilize DOJ appropriations as base funding where Tribes determine priorities.	Use DOJ appropriations as base funding with Tribes setting own priorities
DOJ: Tribal Set-Aside from Office of Justice Programs	Create a 10 percent Tribal set-aside for all discretionary Office of Justice Programs (OJP) programs
DOJ: Tribal Youth Program under the Juvenile Accountability Block Grants Program.	\$25,000,000
DOJ: Crime Victims Fund	Create a 5 percent set-aside for Tribal governments
DOJ: Community Oriented Policing Services (COPS) Tribal Law Enforcement.	\$52,000,000
DOJ: Tribal programs under the Violence Against Women Act	Provide full authorized amount
Commerce: 2020 Census	Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020

NAICJA is a national, non-profit association comprised of Tribal justice personnel, including Tribal leaders, judges, justices, court administrators, court clerks, Indian law practitioners and scholars, and others devoted to supporting and strengthening Tribal justice systems. NAICJA's mission, as a national representative membership organization, is to strengthen and enhance Tribal justice systems through education, information sharing, and advocacy. Established in 1969, NAICJA has a long history of dedication to providing educational support for Tribal court judges and court-related personnel.

DEPARTMENT OF JUSTICE

The public safety problems that continue to plague Tribal communities are the result of decades of gross underfunding for Tribal criminal justice systems; a uniquely complex jurisdictional scheme; and the historic, abject failure by the Federal Government to fulfill its public safety obligations on American Indian and Alaska Native lands. Crime rates in Tribal communities are among the highest in the Nation and American Indians and Alaska Natives experience rates of violent crime that are 2.5 times the national average. Residents and visitors on Tribal lands deserve the safety and security that is taken for granted outside of Indian Country. Increased and streamlined funding in the following program areas will have a huge impact on safety in Tribal communities for Tribal citizens, residents, and visitors to Tribal lands.

Include Tribal governments in disbursements from the Crime Victims Fund (a mandatory account).—The Crime Victims Fund (CVF) is the Federal Government's primary funding source for providing services to victims of crime. NAICJA expresses our sincere gratitude to appropriators for providing a direct funding stream for Tribal governments from the CVF for the first time in fiscal year 2018 and again in fiscal year 2019. For this funding to achieve its purpose, however, it needs to be recurring funds that Tribal governments can plan on in order to ensure program stability for victims for the long term. We urge appropriators 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.

Create a streamlined Tribal allocation across Office of Justice Programs (OJP) programs.—For several years the administration has proposed bill language that would streamline and consolidate OJP Tribal programs by allocating 7 percent from all discretionary OJP programs to address Indian country public safety and Tribal justice needs. In past years, both the House and Senate CJS Subcommittees have supported this request, but it has never been enacted. One of the biggest shortcomings of DOJ Tribal funding is that it is administered as competitive funding. In order to obtain this funding, Tribal nations—on behalf of their Tribal justice systems—must compete against each other under priorities and guidelines established by DOJ. As a result, Tribal nations must develop projects that align with changing DOJ priorities and cannot count on funding continuing beyond the current grant period. A streamlined OJP Tribal allocation would significantly improve 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 allocation would give Tribal nations the flexibility to develop a detailed strategic plan on how best to spend those resources.

If Congress declines to adopt the flexible allocation across OJP programs, restore fiscal year 2010 levels of \$25 million in funding for the Tribal Youth Program under the Juvenile Accountability Block Grants program.—Although Native children comprise only 2.2 percent of the overall youth population, they are arrested at a rate of more than two-to-three times that of other ethnic groups. According to a recent DOJ report, “[s]ubstance abuse, depression, and gang involvement fuel a vast majority of the offenses for which American Indian juveniles are disproportionately confined.” Funding for the Tribal Youth Program has decreased significantly in recent years and should be restored to its fiscal year 2010 level of \$25 million.

Increase funding of Tribal law enforcement programs under DOJ’s Community Oriented Policing Services (COPS) Grants to \$52 million.—Since the creation of the COPS Office, more than 2,000 grants totaling more than \$400 million have been awarded to Tribal nations to hire more than 1,700 new or redeployed law enforcement officers. It has also helped Tribal nations to obtain necessary law enforcement training, equipment, vehicles, and technology. Yet, there is still a tremendous unmet need within Tribal justice systems for more COPS funding. The COPS Office has acknowledged that due to limited resources, it has not been able to adequately fund Tribal justice systems, particularly in the area of hiring/retaining Tribal law enforcement officers. In a report released in December 2010, the COPS Office described its practice of intermittent funding as “problematic,” especially “when referring to hiring of officers.” Indian Country urges Congress to significantly increase funding for Tribal law enforcement programs under the COPS program.

Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for Tribal implementation of VAWA special domestic violence criminal jurisdiction.—It is estimated that over 85 percent of American Indian and Alaska Native women will experience violent victimization in their lifetimes. 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.

The Violence Against Women Reauthorization Act of 2013 (VAWA 2013) recognized and affirmed the inherent sovereign authority of Indian Tribes to exercise Special Domestic Violence Criminal Jurisdiction (SDVCJ) over all persons—Indian and non-Indian—who commit crimes of dating violence, domestic violence, and violations of protection orders within Indian country. The bill authorized \$5 million per year for 5 years for Indian Tribes to implement the VAWA 2013 provisions and otherwise strengthen Tribal justice systems. In fiscal year 2019, \$4 million was appropriated for this program. We urge Congress to appropriate the full amount authorized for VAWA implementation purposes so that more communities are able to take advantage of this lifesaving law.

DEPARTMENT OF COMMERCE

Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020.—The census is a critical and powerful information source that will significantly influence American policy for the coming decade. An accurate count is necessary to ensure the fair distribution of billions of dollars to Tribal nations and American Indian/Alaska Native people across the United States. Certain population groups are at higher risk of being missed in the decennial census—groups considered hard-to-count. Native people especially on reservations and in Alaska Native villages have been historically underrepresented in the census. In the 2010 Census, the Census Bureau estimates that American Indians and Alaska Natives living on reservations or in Native villages were undercounted by approximately 4.9 percent, more than double the undercount rate of the next closest population group. The President’s budget request was significantly lower than Secretary Ross’s estimates of overall costs, and we urge Congress to ensure sufficient funding for a successful 2020 Census, including funding for Questionnaire Assistance Centers, which currently are not included in the Census Bureau’s operational plan. With only half the number of Regional Census Centers and local census offices across the country, it will be important to expand the field footprint, to provide ‘safe space’ for people who do not have reliable Internet access, are wary of using the telephone to respond, or need assistance filling out a paper form, to meet with sworn Census Bureau employees near where they live.

CONCLUSION

Thank you for your consideration of this testimony. For more information, please contact: A. Nikki Borchardt Campbell at nikki@naicja.org or Ansley Sherman at ansley@naicja.org.

PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF LATINO ELECTED AND APPOINTED OFFICIALS (NALEO) EDUCATIONAL FUND

Congressman Jose Serrano
Chair, Commerce, Justice, Science
House Appropriations Committee
H-305, Capitol Building
Washington, DC 20515

Congressman Robert Aderholt
Ranking Member, Commerce, Justice,
Science
House Appropriations Committee
1016 Longworth Office Building
Washington, DC 20515

Senator Jerry Moran
Chair, Commerce, Justice, Science
Senate Appropriations Committee
142 Dirksen Office Building
Washington, DC 20510

Senator Jeanne Shaheen
Ranking Member, Commerce, Justice,
Science
Senate Appropriations Committee
125 Hart Office Building
Washington, DC 20510

Dear Chairman Serrano, Ranking Member Aderholt, Chairman Moran, and Ranking Member Shaheen:

On behalf of the National Association of Latino Elected and Appointed Officials (NALEO) Educational Fund, I write to urge your support for appropriations of at least \$8.448 billion for the Census Bureau in fiscal year 2020. We also request that you adopt a prohibition on expenditures on a decennial survey including any questions not within the scope of the topics submitted to Congress in March 2017.

NALEO Educational Fund is the Nation's leading nonprofit organization that facilitates the full participation of Latinos in the American political process, from citizenship to public service. Our Board members and constituency encompass the Nation's more than 6,700 Latino elected and appointed officials, and include Republicans, Democrats and Independents. NALEO Educational Fund is a national leader in Census outreach, community education and policy development. Since the 1990 Census, our organization has conducted outreach campaigns to promote the full and accurate count of the Latino community. NALEO Educational Fund has been a member of the U.S. Census Bureau's national advisory committees since 2000, and currently sits on the Bureau's National Advisory Committee on Racial, Ethnic and Other Populations. NALEO Educational Fund is also the co-chair of the Leadership Conference on Civil and Human Rights' Census Task Force, and of the National Hispanic Leadership Agenda's Census Task Force.

Congress Must Fully and Timely Fund the Census Bureau in Fiscal Year 2020

In fiscal year 2020, the Census Bureau will conduct the 2020 decennial Census, a massive undertaking for which the agency has been preparing for more than a decade. Securing an accurate count of United States residents requires bringing a website online to handle millions of simultaneous interactions while fending off sophisticated hacking attempts; hiring and training tens of thousands of temporary employees; and managing bulk mailings to tens of millions of addresses. The quality of the population count will have long-reaching and consequential effects on the allocation of political representation and public funding, and on our success at spurring economic development and redressing social challenges.

If the Census Bureau is to succeed, its funding for fiscal year 2020 must be in place by the start of the fiscal year. The Bureau follows a strict timeline from now until December 31, 2020, its statutory deadline for delivering decennial Census results to the President according to 13 U.S.C. § 141(a)-(b). It absolutely cannot delay the hiring, training, printing and other acquisitions, coding, and advertising it will undertake in the first two quarters of fiscal year 2020, nor can it do this extraordinary work competently if, as in the years preceding fiscal year 2020, it once again begins the fiscal year with continuing appropriations at the previous year's level.

Because of the enormous scope of operations that must be implemented in the lead up year to the decennial census, it is essential that Congress fully fund the Census Bureau by providing at least \$8.448 billion no later than October 1, 2019.

Our request would fund the Bureau at the level of the Commerce Department's October 2017 cost estimate of \$6.694 billion, and would add \$66 million for Questionnaire Assistance Centers and \$100 million for additional targeted advertising and communications efforts in the hardest-to-count communities. It would also include \$31.5 million to enable hiring of a number of Partnership Specialists commensurate with the workforce brought onboard in 2010, as well as \$689.2 million for the 10 percent contingency fund Secretary Ross has recommended.

While it takes a decennial Census, the Bureau must also continue its collection of other crucial surveys including the American Community Survey. We request that you provide the Bureau with \$226.3 million for the American Community Survey and \$336.6 million for all other programs funded from the Periodic Censuses account. Our request also includes \$274.2 million for the Current Surveys and Programs account.

Our funding request is modest and appropriate when one takes into account the unique challenges of and risks associated with the 2020 Census. For 2020, the Census Bureau has committed to modernizing its procedures by collecting responses over the Internet for the first time in a decennial, and making more extensive use of administrative records to supplement responses. These operational innovations must be accompanied by intensive efforts to safeguard data and systems, and to earn respondents' trust. Even though the Bureau will employ extraordinary and creative measures, it projects that a progressively smaller percentage of households will voluntarily self-respond to the Census in 2020. Growing mistrust of the government and wider awareness of our government's vulnerability to cyberattacks will complicate efforts to collect sensitive personal information from every household in the country.

Congress cannot insulate the Census Bureau from the difficult sociopolitical context surrounding the 2020 Census, but it can and must provide the Bureau with funding that recognizes that context and equips the agency to overcome hurdles in its way to the best of its ability. It can fulfill this imperative and work toward its goal of making enumeration more efficient and cost-effective by appropriating \$8.448 billion for the Bureau in fiscal year 2020.

Congress Must Help the Census Bureau Improve Efficiency By Preventing Last-Minute Changes to the Census

In addition to appropriating the necessary resources for the Census Bureau to take a complete and accurate Census, Congress can and must set the 2020 Census on the path to success by ensuring against last-minute changes to Census materials and procedures. The scale and complexity of the decennial Census demand that key decisions about matters such as creation of an online Census response portal be made no less than several years in advance of Census Day. For this reason, the Bureau solicits input about its forms and questions in the middle of each decade, and settles on topics to be covered in a decennial Census by each year ending in -7. Any subsequent deviation from plans cannot be appropriately tested in advance of enumeration, and will thus threaten to increase the cost and decrease the quality of the count.

We are concerned data from the 2020 Census data will lack the same level of reliability as that resulting from previous decennial enumerations in light of the Commerce Department's decision to add a last-minute untested question about citizenship to the 2020 Census questionnaire. Given that important operational plans and materials have been developed without taking the citizenship question into account, and without the benefit of empirical knowledge of the ways in which the citizenship question will change Census respondents' attitudes and behaviors, the associated risk of a failed Census is great.

Available evidence strongly indicates that inclusion of a citizenship question on the 2020 Census will reduce participation and the quality of responses and resulting data. For example, in 2017 and 2018, Census Bureau enumerators and experts began sounding new alarms about public perception of Census surveys and their most sensitive inquiries. A September 2017 memorandum from the Bureau's Center for Survey Measurement stated, "researchers have noticed a recent increase in respondents spontaneously expressing concerns about confidentiality in...studies conducted in 2017." As of August 2018, the Bureau's Center for Economic Studies had increased its best estimate of the number of additional households likely not to respond to a citizenship-question Census to just over two million, from an earlier estimate of 630,000. It also raised the projected additional number of people needing enumeration via expensive non-response follow up operations to about 6.5 million.

NALEO Educational Fund's and other community stakeholders' research and polling have produced consistent results that indicate that Census response rates and data quality would suffer because of inclusion of a citizenship question in the decen-

nial survey. Participants in focus groups we convened around the country expressed heightened hesitation, fear, and cynicism upon seeing a version of the Census questionnaire that included the proposed question. In addition, an overwhelming majority of more than 75 percent of the people we surveyed in Providence County, Rhode Island, the site of the 2018 Census End-to-End Test, agreed with the proposition, “Many people in Providence County will be afraid to participate in the 2020 Census because it will ask whether each person in the household is a citizen.”

By depressing voluntary response to the decennial Census, the addition of a citizenship question will diminish the quality and accuracy of resulting data, and increase the cost of obtaining it. The Census Bureau cannot and does not leave households that do not complete the Census alone; instead, it takes extraordinary and costly measures to attempt to obtain firsthand information from each residence. In January 2018, the Bureau estimated that it would cost an additional \$55 million to enumerate each additional 1 percent of households that did not voluntarily answer the Census. This figure has been increasing since mid-decade as the Bureau has updated its operational plans, however, and also depends upon optimistic assumptions about the agency’s ability to reduce the number of in-person visits required to contact members of non-responding households, and to obtain data about non-responding households from government records instead of from in-person contacts.

The Census Bureau’s Center for Economic Studies has astutely pointed out that households that decline to complete a Census form are also very likely not to cooperate with in-person enumerators, making their enumeration by proxy the most likely result. If, as the Center estimates, more than two million additional households are most likely to be counted by proxy because of the citizenship question, the likely result would be 1,750,000 fewer correct enumerations and additional cost of at least \$91.2 million.

The harm to data quality and the extra expense likely to result from late alteration of the decennial Census questionnaire are typical of the bad result that Congress sought to avert by mandating, at 13 U.S.C. § 141(f)(3), that officials only implement any such proposed change after identifying the new circumstances that necessitate it. No new circumstances have arisen that justify adding any new question to the 2020 Census, and therefore Congress must exercise its authority to halt the counterproductive and costly last minute addition. We urge you to include the following language in funding provisions for the Census Bureau:

None of the funds made available under this Act may be used by the Secretary of Commerce to incorporate into the 2020 decennial census any question that was not within the scope of planned subjects published by the Census Bureau on March 28, 2017.

CONCLUSION

Stewardship of an effective Census is one of the first duties assigned in the Constitution to the Federal government, and one of the most fundamental to our democratic character. We are grateful for your attention to these matters, and for the present opportunity to submit testimony in support of the Census Bureau.

[This statement was submitted by Arturo Vargas, Chief Executive Officer.]

PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF MARINE LABORATORIES

The National Association of Marine Laboratories (NAML) is pleased to submit this testimony to the subcommittee for consideration in the fiscal year 2020 Commerce-Justice-Science Appropriations Act. In this statement, we provide our recommendations for the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA) that we believe would strengthen the Nation’s ocean, coastal, and Great Lakes research and education enterprise. The network of the Nation’s marine laboratories is cost effective, highly relevant, and the vehicle that brings science to those who depend on research results to protect lives and support livelihoods.

NAML’S MESSAGE

This subcommittee is uniquely responsible for the health of the ocean, coastal, and Great Lakes enterprise through your oversight and resource decisionmaking responsibilities related to NOAA, NSF, NASA, and other agencies. That enterprise is a

critical part of the security of the Nation as it relates to economic, environmental, national, homeland, energy, conservation resources, and food security issues.

NAML is deeply appreciative this subcommittee has rejected the administration's past proposals to reduce or eliminate these time tested programs and instead, actively strengthened them despite its constraint in available resources and competing national needs.

In fiscal year 2020 the administration has again proposed steep reductions and/or the elimination of funding for this subcommittee's extramural research and education activities that support ocean, coastal, and Great Lakes research, conservation, observing, and education programs. We urge the subcommittee to reject these proposals and fully reinstate these programs based on the contributions they make that help maintain the health of our ocean and coastal enterprise.

THE VALUE OF THE OCEAN, COASTAL, AND GREAT LAKES ENTERPRISE

The future well-being of the Nation is in large part dependent on our ocean, coastal, and Great Lakes resources:

- The U.S. ocean economy, which includes six economic sectors that depend on the ocean, is estimated to have contributed more than \$320 billion to the U.S. Gross Domestic Product (GDP) and supported 3.2 million jobs directly dependent on these resources in 2015;
- 42 percent of the U.S. labor force is employed in coastal watersheds;
- In 2014, counties adjacent to the shore contributed 43 percent percent of the U.S. GDP;
- The offshore mineral industry contributed over 170,000 jobs in 2013 and \$122 billion, the majority of which was predominantly from the oil and gas sector;
- Approximately 88,000 square miles of the Nation's coastal wetlands provide nursery areas for commercially harvested fish and places of refuge for migrating birds;
- In 2015, the commercial and recreational fishing industry supported 1.6 million jobs and contributed \$208 billion in sales to the U.S. economy; and
- Ocean measurements, observations, and forecasting generate about \$7 billion in revenues annually.

The oceans are a primary source of food for over one billion people; a globally significant regulator of the earth's weather and climate; the basic source of water for the hydrologic cycle; a recycling agent that absorbs carbon dioxide and produces oxygen; and home to many thousands of flora and fauna, many with pharmaceutical value.

America is a major consumer of aquaculture products. The United States currently imports more than 90 percent of its seafood, leading to a \$14 billion seafood trade deficit. Given that the World Bank projects a nearly 50 percent increase in worldwide fish consumption between 2006 and 2030, the United States has an opportunity to meet this demand, ensure food security, create new industries, and provide jobs by maximizing sustainable wild and aquaculture harvest. NAML laboratories are leaders in developing and supporting innovative methods that will improve and encourage U.S. aquaculture products that complement and help sustain existing wild-capture commercial fisheries.

America's coastlines and offshore areas contain untapped renewable and non-renewable energy sources to help power the Nation and much of the world. In addition to generating electricity, power generated at sea (from waves, currents, or wind) could be used to serve the needs of other existing or emerging ocean industries (aquaculture, ocean mineral mining, oceanographic research, or military missions).

NAML PRIORITIES AND RECOMMENDATIONS FOR FISCAL YEAR 2020

NAML is a nonprofit organization representing the ocean, coastal and Great Lakes interests of member laboratories that employ thousands of scientists, engineers and professionals nationwide. NAML labs conduct high quality research and education in the natural and social sciences and translate that science to improve the decisionmaking by policy officials on important issues facing our country and fostering economic development. NAML's priorities are drawn from: Sea Change: 2015–2025 Decadal Survey of Ocean Sciences (DSOS); Enhancing the Value and Sustainability of Field Stations and Marine Laboratories in the 21st Century; and Science and Technology for America's Oceans: A Decadal Vision. These reports emphasize the need to understand oceans in the earth system, promote the blue economy, and advance monitoring and predictive modeling capabilities. According to Sea Change, NAML laboratories bring a high degree of relevance to these national priorities at lower cost, higher return on investment and with the important benefit of

training succeeding generations of marine and related science professionals. Expanded support in the form of research, infrastructure and education should be focused on:

- U.S.-based aquaculture to reduce the ever-increasing demand for foreign imports, to advance seafood security and to expand opportunities for economic growth;
- Defining the impacts and causative factors for shifting environmental regimes to improve coastal resiliency and inform risk management of critical defense, transportation, civic and business infrastructure along U.S. coastlines;
- Oceanographic and geochemical exploration and associated technology development to advance national security, commerce and domestic energy independence;
- Data collection and adaptive management strategies to increase productivity and sustainability of marine fisheries and social-economic productivity of U.S. exclusive economic zones;
- Comprehensive understanding of ecosystems which support fisheries and other social-economic drivers; and
- Discovery and education and training in biological, chemical, geological and physical marine sciences to support advancement of human and environment health and social-economic objectives.

Accordingly, NAML offers the following recommendations for the subcommittee's consideration:

- The Nation should build on its investment in research, infrastructure, and observing capabilities to develop the knowledge, people, and technologies that power the ocean and coastal economies, create jobs, improve health, strengthen our national security, and support the U.S. as the global innovation leader. The key programs that support this goal include:
 - NSF funding for research, training, infrastructure, and education much of which is supported by the Directorates for Geosciences and Biological Sciences with particular emphasis on the Improvements to Biological Field Stations and Marine Laboratories (FSML) program (\$6 million) and the developing Coastlines and People (CoPe) initiative;
 - Extramural funding provided by NOAA including funding the National Sea Grant College Program (\$93.5M for research, education, and marine aquaculture), the Integrated Ocean Observing System (\$50.5M), Ocean Acidification research; Aquaculture research; the National Estuarine Research Reserve System (\$28.7M); the National Marine Sanctuary System (\$65.5M), Coastal Zone Management Grants (\$80.5M);
 - Enhance the role of science within the Coastal Resilience Grants program (Title IX) (\$35 million), and the Habitat Conservation Restoration Grants program (\$58 million); and
 - Strengthen funding for NASA Earth Sciences (\$2.5B).
- Renew the commitment to improve the quality of STEM education and re-energize efforts to attract, recruit, support, and retain women, minorities and others not currently well represented in the science and technology workforce through such efforts as:
 - NSF's overarching Improving Undergraduate STEM Education (IUSE) including, Research Experiences for Undergraduates (REU), its Alliances for Minority Participation, the graduate; and the Fellowship programs at NSF, NOAA, and NASA; and
 - Restore funding for NOAA and NASA education programs.

NAML is concerned by the administration's recommendations for reductions to NSF, NASA and NOAA as part of the fiscal year 2020 budget request. NAML is also concerned and opposes NOAA's proposal for authority that could result in the Federal Government competing with non-Federal and private entities for limited private sector philanthropic support (See proposed Section 108 of the General Provisions in the NOAA Section of the Appendix to the fiscal year 2020 Budget, page 207). The time-tested programs, that support the extramural research and education community via competitive, merit-based research, provide cost-effective and impressive returns on investment, leverage additional resources to meet science and management priorities, distribute economic and societal benefits over a broad array of communities, and provide the agency with valuable flexibility.

NAML requests the subcommittee to reject the administration's proposed reductions for research, infrastructure, and education and training. Instead, NAML urges the subcommittee to invest in the future of the Nation by supporting the ocean, coastal, and Great Lakes research and education enterprise represented in part by

the NAML priorities articulated in this statement. NAML also requests the subcommittee to continue its vigilance regarding proposals that would result in unfair competition with the private sector.

CONCLUSION

This subcommittee is uniquely responsible for the health of our Nation's research and education enterprise. Over 50 percent of the extramural nondefense, non-bio-medical Federal support for research and education is provided by this subcommittee. Thus, the subcommittee is in a unique position to impact the Nation's long term economic growth, national security, and public safety through its investments in the agencies under its jurisdiction. The economic value of research investments is borne out by history. While we appreciate, the difficult constraints facing the Nation and this subcommittee we hope the subcommittee will continue to be a leading and influential voice in the health of the Nation's research enterprise via the decisions it makes in developing the fiscal year 2020 Commerce-Justice-Science Appropriations Act.

NAML is grateful for the opportunity to provide the subcommittee with our members' priorities and recommendations.

[This statement was submitted by Dr. Robert Cowen, President.]

PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF MARINE LABORATORIES, SEA GRANT ASSOCIATION, IOOS ASSOCIATION, NATIONAL ESTUARINE RESEARCH RESERVE ASSOCIATION, NATIONAL MARINE SANCTUARY FOUNDATION, COASTAL STATES ORGANIZATION, RESTORE AMERICA'S ESTUARIES, AND ASSOCIATION OF STATE FLOODPLAIN MANAGERS

NATION'S OCEAN, COASTAL, AND GREAT LAKES RESEARCH, EDUCATION, CONSERVATION, AND RESOURCE MANAGEMENT ENTERPRISE

Mr. Chairman and Members of the subcommittee, this joint statement is submitted on behalf of the non-profit organizations listed above who share a deep and overriding concern for the health of the Nation's oceans, coasts, and Great Lakes. This subcommittee is responsible for the health of the ocean, coastal, and Great Lakes enterprise via oversight and resource decisionmaking related to NOAA, NSF, NASA, and other agencies. That enterprise is a critical part of the security of the Nation as it relates to economic, environmental, national, homeland, energy, conservation, and food security issues. The administration budget for fiscal year 2020 proposes the elimination of extramural funding for this subcommittee's ocean, coastal, and Great Lakes research, conservation, observing, and education programs. We urge the subcommittee to reinstate these programs based on the significant contributions they make for the health of our ocean and coastal enterprises.

The future well-being of the U.S. is in large part dependent on our ocean, coastal, and Great Lakes resources. The U.S. ocean economy is estimated to have contributed more than \$320 billion to the U.S. Gross Domestic Product (GDP) and supported 3.2 million jobs in 2015. Over 40 percent of the U.S. labor force is employed in coastal watersheds. The offshore mineral industry contributed over 170,000 jobs in 2013 and \$122 billion to GDP. Approximately 88,000 square miles of the Nation's coastal wetlands provide nursery areas for commercially harvested fish and places of refuge for migrating birds. Estuaries provide habitat for nearly 70 percent of the U.S. commercial fisheries catch and 80 percent of recreational catch. In 2015, the commercial and recreational fishing industry supported 1.6 million jobs and contributed \$208 billion in sales to the U.S. economy. Ocean measurements, observations, and forecasting generate about \$7 billion in revenues annually. For every \$1 invested in environmental restoration, \$4 in economic value is generated by enhancing the tourism and fishing industries.

The ocean and our coasts are equally important for humanitarian, environmental, and health reasons. The oceans are a primary source of food for over one billion people, a globally significant regulator of the earth's climate, the basic source of water for the hydrologic cycle, a cleaning agent that absorbs carbon dioxide and generates oxygen, and home to many thousands of flora and fauna. The oceans are a source of discovery to understand and treat cancers and other human diseases. A wide gulf often separates science from the people who need research results to protect and support them. However, the new ocean economy puts science and predictive capabilities to work in a way that can fill critical, fast-rising needs across sectors.

All of the organizations that contribute their names to this statement stand in strong support for the ocean, coastal and Great Lakes research, conservation, ob-

servicing, and education programs managed by NOAA. Specifically, we are referring to:

- The National Sea Grant College Program and Marine Aquaculture;
- The Integrated Ocean Observing System;
- The National Estuarine Research Reserve System;
- The National Marine Sanctuary System;
- Coastal Zone Management Grants;
- Coastal Resilience Grants (Title IX);
- NMFS Habitat Conservation and Restoration; and
- The Digital Coast Program

Sea Grant is a unique program within NOAA that sends 95 percent of its appropriated funds to coastal States through a competitive process to address critical issues identified 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 and businesses. In 2017, the Sea Grant program helped generate an estimated \$579 million in economic impacts, created or supported over 12,500 jobs, provided 33 State-level programs with funding that assisted 462 communities to improve their resilience, helped nearly 17,700 fishers adopt safe and sustainable fishing practices, helped restore an estimated 700,000 acres of coastal ecosystems, worked with about 1,300 industry, private sector, local, State and regional partners, and supported the education and training of over 1,800 undergraduate and graduate students.

America's estuaries sustain coastal businesses, protect communities from flooding, keep water clean, sustain commercial fisheries, support wildlife, and provide opportunities for recreation. The National Estuarine Research Reserve System (NERRS) maintains 280 stations that track local water quality, pollution, and weather around the country. These platforms collect data—42 million data points each year—that track hazardous spills, shellfish industry operations, storm damage and more. Reserves engage more than 36,000 volunteers and community members. Over 3,000 educators and 81,000 K–12 students receive outdoor STEM education. Over 100 universities & research institutions are Reserve partners. In excess of 350 graduate research fellows have studied at a Reserve. Similar to Sea Grant, approximately 98 percent of Federal NERRS funding goes to the communities in which the Reserves are located. NERRS funding also leverages State matching funds raising \$6 million annually to supplement the Federal funding; and over the last 3 years, matching funds invested in the NERRS leveraged an average of approximately \$22 million annually.

Coastal observing systems are used to gather real time information and turn it into useful products that support coastal residents, coastal economies, and a healthy, sustainable environment. They provide timely, actionable information developed from reliable and user-driven science to provide insight into present and future conditions. The need for data and information to help protect lives, economies and the environment has never been greater. Flood protection, safe and efficient marine operations, fisheries, aquaculture, water quality and safe recreation require an expanded network of observing systems and enhanced analysis that will improve predictive and forecasting capabilities for all users. The Integrated Ocean Observing System (IOOS) is a Federal partnership that generates and delivers quality information about the Nation's oceans, coasts and Great Lakes. IOOS increases economic efficiency and minimizes redundancy by leveraging non-Federal investments. Over 50 percent of the marine data now assembled and disseminated by NOAA's National Data Buoy Center is from non-Federal sources. IOOS provides a cost-effective approach to providing the Nation with reliable information to enhance maritime commerce; improve weather and flooding forecasting; supporting fisheries, ecosystems and water quality; and enhances our ability to plan for and respond to unforeseen hazards.

The National Coastal Zone Management Program (CZM Program) is a state-Federal partnership supporting the effective management, beneficial use, protection, and development of the coastal zone. Healthy coastal resources support business and conservation, and long-term planning is essential for coastal areas to remain the economic drivers they are today. In fiscal year 2017, States and territories matched over \$56.9 million in investment in the CZM Program. The CZM program helps enable our Nation's coastal communities to plan for uncertainties and protect lives and investments on the coast. This State-Federal partnership ensures the responsible use of coastal resources by balancing the needs of economic development and conservation of natural resources while also planning for potential impacts to a State's coastal zone.

The National Marine Sanctuary System is our essential network of protected waters held in trust for all Americans. Encompassing more than 600,000 square miles, national marine sanctuaries conserve some of the Nation's most critical natural, historic, and cultural resources. They are home to many thousands of species, preserve our Nation's maritime heritage, and promote access for exploration and world-class outdoor recreation. Sanctuaries are vital to maintaining the healthy ocean and Great Lakes ecosystems that underpin our productive coastal economies. They generate \$8 billion annually in local economies and support jobs and businesses in fishing, tourism, recreation, and scientific research. Nationwide, communities are coming together to conserve our oceans, coasts, and Great Lakes by expanding existing national marine sanctuaries and proposing new designations for the first time in 19 years. Engaging communities as stewards of these protected waters makes sanctuaries unique and provides a comprehensive, highly participatory approach to managing and conserving marine ecosystems and the Great Lakes for current and future generations.

The Digital Coast effort meets the unique information needs of the coastal management community. It provides access not just to a growing body of coastal data, but also the tools, training, and information needed to make over 5 trillion points of LIDAR, 37 terabytes of imagery, and 800,000 square miles of land cover, collected from both Federal and non-Federal sources, useful for coastal managers, planners, and decision makers charged with managing the Nation's coastal resources. The products and services provided by the Digital Coast include data, information, and training for more than 4,000 coastal communities.

In conclusion, we urge the subcommittee to continue support for its portfolio of ocean and coastal programs and we offer the following specific programmatic recommendations:

- National Sea Grant College Program*, \$93.5 million for research, education, extension, and outreach activities, including aquaculture, STEM education, and Sea Grant Knauss fellowship programs within the NOAA Operations, Research, and Facilities account within the Office of Oceanic and Atmospheric Research;
- Integrated Ocean Observing System (IOOS)*, \$50.5 million to support both the regional and national system within NOAA's Operations, Research, and Facilities account, National Ocean Service;
- National Estuarine Research Reserve System*, \$30 million in NOAA's Operations, Research and Facilities account within the National Ocean Service; and \$4 million for the Procurement, Acquisition and Construction account within the National Ocean Service;
- Sanctuaries and Marine Protected Areas*, \$57 million within the NOAA's Operations, Research, and Facilities account in the National Ocean Service; and \$8.5 million within NOAA's Procurement, Acquisition, and Construction account in the National Ocean Service;
- Coastal Zone Management Grants*, \$80.5 million within NOAA's Operations, Research, and Facilities account, National Ocean Service;
- Coastal Resilience Grants (Title IX)*, \$35 million within NOAA's Operations, Research, and Facilities account, National Ocean Service;
- Habitat Conservation and Restoration* (includes Community-Based Restoration Program), \$58 million within NOAA's Operations, Research, and Facilities account, National Marine Fisheries Service; and
- Digital Coast Program*, \$5 million within NOAA's Operations, Research, and Facilities account, National Ocean Service.

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 unified message.

PREPARED STATEMENT OF THE NATIONAL CONGRESS OF AMERICAN INDIANS

On behalf of the National Congress of American Indians (NCAI), this testimony addresses important programs in the Department of Justice and Department of Commerce. As the most representative organization of American Indian and Alaska Native Tribal nations, NCAI serves the broad interests of Tribal governments across the United States. As Congress considers the fiscal year 2020 budget and beyond, leaders of Tribal nations call on decision-makers to ensure that the promises made

to Indian Country are honored in the Federal budget. Specifically, NCAI requests the following:

Agency	Program	NCAI Fiscal Year 2020 Request
Commerce	Minority Business Development Agency	\$39,000,000 and a set-aside to re-establish NABECs within MBDA.
Commerce	Office of Native American Business Development	\$2,000,000
Commerce	Office of Native American Affairs	\$2,000,000
Commerce	Pacific Coastal Salmon Recovery Fund	\$110,000,000
Commerce	Salmon Management	Provide \$25.9 million for NOAA Mitchell Act Hatchery Programs
Commerce	2020 Census	Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020, with at least \$7.58 billion in direct funding for 2020 census operations
NSF	Education and Human Resources Funding for Tribal Colleges and Universities.	\$15,000,000
DOJ	Tribal Grants: Eliminate competitive grant funding process and utilize DOJ appropriations as base funding where Tribes determine priorities.	Use DOJ appropriations as base funding with Tribes setting own priorities
DOJ	Tribal Set-Aside from Office of Justice Programs	Create a 10 percent Tribal set-aside for all discretionary Office of Justice Programs (OJP) programs
DOJ	Tribal Youth Program under the Juvenile Accountability Block Grants Program.	\$25,000,000
DOJ	Crime Victims Fund	Create a 5 percent set-aside for Tribal governments
DOJ	Community Oriented Policing Services (COPS) Tribal Law Enforcement.	\$52,000,000
DOJ	Tribal programs under the Violence Against Women Act (VAWA).	Provide full authorized amount

DEPARTMENT OF JUSTICE

The public safety problems that continue to plague Tribal communities are the result of decades of gross underfunding for Tribal criminal justice systems; a uniquely complex jurisdictional scheme; and the historic, abject failure by the Federal Government to fulfill its public safety obligations on American Indian and Alaska Native lands. Crime rates in Tribal communities are among the highest in the Nation and American Indians and Alaska Natives experience rates of violent crime that are 2.5 times the national average. Residents and visitors on Tribal lands deserve the safety and security that is taken for granted outside of Indian Country. Increased and streamlined funding in the following program areas will have a huge impact on safety in Tribal communities for Tribal citizens, residents, and visitors to Tribal lands.

Include Tribal governments in disbursements from the Crime Victims Fund (a mandatory account).—The Crime Victims Fund (CVF) is the Federal Government's primary funding source for providing services to victims of crime. NCAI expresses our sincere gratitude to appropriators for providing a direct funding stream for Tribal governments from the CVF for the first time in fiscal year 2018 and again in fiscal year 2019. For this funding to achieve its purpose, however, it needs to be recurring funds that Tribal governments can plan on in order to ensure program stability for victims for the long term. We urge appropriators 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.

Create a streamlined Tribal allocation across Office of Justice Programs (OJP) programs.—For several years the administration has proposed bill language that would streamline and consolidate OJP Tribal programs by allocating 7 percent from all discretionary OJP programs to address Indian country public safety and Tribal justice needs. In past years, both the House and Senate CJS Subcommittees have supported this request, but it has never been enacted. One of the biggest shortcomings of DOJ Tribal funding is that it is administered as competitive funding. In order to obtain this funding, Tribal nations—on behalf of their Tribal justice systems—must compete against each other under priorities and guidelines established by DOJ. As a result, Tribal nations must develop projects that align with changing DOJ priorities and cannot count on funding continuing beyond the current grant period. A streamlined OJP Tribal allocation would significantly improve 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 preven-

tion programs. Further, the Tribal allocation would give Tribal nations the flexibility to develop a detailed strategic plan on how best to spend those resources.

If Congress declines to adopt the flexible allocation across OJP programs, restore fiscal year 2010 levels of \$25 million in funding for the Tribal Youth Program under the Juvenile Accountability Block Grants program.—Although Native children comprise only 2.2 percent of the overall youth population, they are arrested at a rate of more than two-to-three times that of other ethnic groups. According to a recent DOJ report, “[s]ubstance abuse, depression, and gang involvement fuel a vast majority of the offenses for which American Indian juveniles are disproportionately confined.” Funding for the Tribal Youth Program has decreased significantly in recent years and should be restored to its fiscal year 2010 level of \$25 million.

Increase funding of Tribal law enforcement programs under DOJ’s Community Oriented Policing Services (COPS) Grants to \$52 million.—Since the creation of the COPS Office, more than 2,000 grants totaling more than \$400 million have been awarded to Tribal nations to hire more than 1,700 new or redeployed law enforcement officers. It has also helped Tribal nations to obtain necessary law enforcement training, equipment, vehicles, and technology. Yet, there is still a tremendous unmet need within Tribal justice systems for more COPS funding. The COPS Office has acknowledged that due to limited resources, it has not been able to adequately fund Tribal justice systems, particularly in the area of hiring/retaining Tribal law enforcement officers. In a report released in December 2010, the COPS Office described its practice of intermittent funding as “problematic,” especially “when referring to hiring of officers.” Indian Country urges Congress to significantly increase funding for Tribal law enforcement programs under the COPS program.

Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for Tribal implementation of VAWA special domestic violence criminal jurisdiction.—It is estimated that over 85 percent of American Indian and Alaska Native women will experience violent victimization in their lifetimes. 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.

The Violence Against Women Reauthorization Act of 2013 (VAWA 2013) recognized and affirmed the inherent sovereign authority of Indian Tribes to exercise Special Domestic Violence Criminal Jurisdiction (SDVCJ) over all persons—Indian and non-Indian—who commit crimes of dating violence, domestic violence, and violations of protection orders within Indian country. The bill authorized \$5 million per year for 5 years for Indian Tribes to implement the VAWA 2013 provisions and otherwise strengthen Tribal justice systems. In fiscal year 2019, \$4 million was appropriated for this program. We urge Congress to appropriate the full amount authorized for VAWA implementation purposes so that more communities are able to take advantage of this lifesaving law.

DEPARTMENT OF COMMERCE

Provide \$39 million for the Minority Business Development Agency (MBDA).—The Minority Business Development Agency (MBDA) was created to support minority business development centers to provide business consulting and financing services. Initial funding for the MBDA was set at \$63 million, but this budget has since decreased. Funding the MBDA at \$39 million will assist Tribal nations in obtaining vital business consulting, financing services, and procurement of technical assistance.

Fund the Office of Native American Business Development at a minimum of \$2 million as part of the Commerce Department Management Budget.—The establishment of the Office of Native American Business Development (ONABD) was codified by the enactment of the Native American Business Development, Trade Promotion and Tourism Act of 2000, Public Law 106–464 (the 2000 Act). However since its establishment, ONABD has relied on base resources from the Minority Business Development Agency (MBDA) to coordinate Federal programs for financial and technical assistance to increase business, expand trade, and support economic development on Tribal lands. In its fiscal year 2016 budget request submitted to Congress, MBDA noted the absence of appropriations to support ONABD since it was created by the 2000 Act, and also the lack of appropriations to implement other aspects of Public Law 106–464 and the Indian Tribal Regulatory Reform and Business Development Act of 2000. In order to carry out its mission, ONABD must receive adequate and sustained support to implement Indian policy initiatives and expand Na-

tive American business development initiatives both domestically and internationally.

Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020, with at least \$7.58 billion in direct funding for 2020 census operations.—The census is a critical and powerful information source that will significantly influence American policy for the coming decade. An accurate count is necessary to ensure the fair distribution of billions of dollars to Tribal nations and American Indian/Alaska Native people across the United States. Certain population groups are at higher risk of being missed in the decennial census—groups considered hard-to-count. Native people especially on reservations and in Alaska Native villages have been historically underrepresented in the census. In the 2010 Census, the Census Bureau estimates that American Indians and Alaska Natives living on reservations or in Native villages were undercounted by approximately 4.9 percent, more than double the undercount rate of the next closest population group. The President's Budget request was significantly lower than Secretary Ross's estimates of overall costs, and we urge Congress to ensure sufficient funding for a successful 2020 Census, including funding for Questionnaire Assistance Centers, which currently are not included in the Census Bureau's operational plan. With only half the number of Regional Census Centers and local census offices across the country, it will be important to expand the field footprint, to provide 'safe space' for people who do not have reliable Internet access, are wary of using the telephone to respond, or need assistance filling out a paper form, to meet with sworn Census Bureau employees near where they live.

CONCLUSION

Thank you for your consideration of this testimony. For more information, please contact Virginia Davis, Senior Advisor, at vdavis@ncai.org.

PREPARED STATEMENT OF THE NATIONAL COURT APPOINTED SPECIAL ADVOCATE ASSOCIATION

DEPARTMENT OF JUSTICE FUNDING

Chairmen Shelby and Moran, Vice Chairman Leahy, Ranking Member Shaheen, 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 2020 budget including full funding of the Court Appointed Special Advocates (CASA) Program through the Office of Juvenile Justice and Delinquency Prevention (OJJDP) at the congressionally-authorized level of \$12 million.

CASA/Guardian ad Litem (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 fully authorized 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 260,000 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 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 fully authorized 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 2020 funding of \$12 million will be targeted to fortifying resources and training for CASA/GAL programs in the area of commercial sexual exploitation based upon existing best practices and models. In addition, this Federal funding will be used to target resources to serve over 260,000 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. With-

out 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 fund the Court Appointed Special Advocates Program at our authorized level of \$12 million in fiscal year 2020 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 THE NATIONAL ESTUARINE RESEARCH RESERVE
ASSOCIATION

Chairman and Members of the subcommittee, my name is Lisa Auermuller and I am the Assistant Manager of the Jacques Cousteau National Estuarine Research Reserve in New Jersey, administered by Rutgers, The State University of NJ. I submit this testimony in my capacity as President of the National Estuarine Research Reserve Association (NERRA). NERRA is a not-for-profit scientific and educational organization dedicated to the protection, understanding, and science-based management of our Nation's estuaries and coasts.

Thank you, on behalf of these special places and all of the communities they support. We appreciate the investment Congress has made in the National Estuarine Research Reserve System (NERRS) over the past 46 years. Because of your support, coastal States and communities have worked to expand the NERRS into a network of 29 protected places spanning over 1.3 million acres of coastal land. Reserves are locally managed programs that communities depend on to address critical challenges like balancing economic growth and natural resource conservation. Reserves help local communities plan for extreme storms and rising sea levels, protect nursery habitats that support commercial and recreational fisheries, and prepare the next generation to be wise stewards of these precious resources in the future. This unique State-Federal partnership brings the scientific expertise and financial resources of NOAA into coastal communities across the country. Investments in the research reserves support locally implemented science-based coastal resource management, research, and education programs.

RESERVES ARE VALUED, VALUABLE, AND HIGHLY LEVERAGED

Reserves support healthy estuaries and healthy estuaries support communities nationwide. From Alaska's Kachemak Bay to Rookery Bay in Florida, estuaries protect thousands of communities from flooding, keep water clean, sustain and create jobs, support fish and wildlife, and offer endless opportunities for outdoor recreation and water-based small businesses. Reserve programs help sustain more than 10,000 jobs, provide training to more than 13,400 people. Our national system contributes billions of dollars to the shellfish and seafood industry and tens of billions of dollars in ocean-dependent industries along our coasts. Each year, coastal wetlands, like those protected by the NERRS, provide \$26.25 billion in value by protecting U.S. communities against storms.

Every reserve leverages additional funding for their surrounding communities. In some States, this can be as much as \$1.5 million. NERRS funding also leverages State matching funds raising \$6 million annually to supplement the Federal funding; and, over the last 3 years, matching funds invested in the NERRS leveraged an average of \$22 million annually.

In addition to their ability to leverage funding, reserves engage and empower people in their own communities. Over a half of million people visit reserves each year

and all reserves attract volunteers that offset costs by donating approximately 82,000 hours of work every year equating to a value of \$1.9 million in services. It is well documented that people place an enormous value in living near a healthy estuary. Locally, Reserves become trusted sources of science-based information and recreation for community members to recreate with, learn from and rely on when information is needed to inform decisionmaking.

NERRA RECOMMENDATIONS

For fiscal year 2020, NERRA strongly recommends the following funding levels within the National Oceanic and Atmospheric Administration (NOAA):

NERRS Operations: \$30 million

NERRS Procurement, Acquisition, and Construction (PAC): \$4 million

While NERRA is disappointed with the administration's continued elimination of funding for the NERRS and for other programs that support coastal and ocean science and management, we are heartened by the support from Senate and Congress. We agree that everyone benefits from the return on investment the NERRS provide. Specifically, economic opportunities and quality of life that coastal communities and natural resources provide. To preserve the safety, economic vitality, and cultural and environmental values of the coast, we need to invest in proven programs that are delivering direct benefits. NERRA's recommended budget will allow reserves to maintain and increase:

- Science programs that deliver guidance and solutions to issues facing local, state and national interests.
- Environmental monitoring programs that serve as a foundational element of national water and weather coastal observations.
- Science, technology, engineering and mathematics focused education programs that serve approximately 81,000 students and more than 3,000 teachers each year.
- Public access for hunting, fishing, and passive recreation on over a million acres of land and water.
- Scientific technical assistance and information to professionals in over 2500 cities and towns and 570 businesses nationwide.
- Support for students and researchers at over 100 university partners.

NERRA's fiscal year 2020 request is a \$3 million increase over current program baseline. We are requesting an additional \$3 million for the NERRS budget so we can build on our efforts to help coastal communities be more prepared and resilient as they experience disruptions like super-sized storms, record floods and droughts, hazardous spills, and fisheries collapse.

That \$30 million will translate into an additional \$100,000 in operations funds for each Reserve and their communities. Each Reserve will focus their increased funds in one or two of the following areas:

- Targeted science and monitoring to help communities prepare for, and move forward from, disruptive events.
- Protection of natural infrastructure that sustains businesses, including commercial fisheries.
- Programs that train professionals, educate the public, and prepare the next generation workforce to manage our changing coasts.

PROTECTING SPECIAL PLACES FOR SCIENCE, RECREATION, EDUCATION

The NERRS Procurement, Acquisition, and Construction (PAC) funding is designated for land conservation, through acquisition of priority lands, and essential facilities construction and upgrades. This competitive funding program is matched by State funds and is critical to maintaining the places that host NERR research, education and outreach. The current estimated need by Reserves for these funds is documented at more than \$9 million. Reserves are destinations for tourists, natural playgrounds for children, and havens for quiet reflection for people around the country. Additionally, hunters and fishermen use these public lands for commercial and recreational uses: 27 reserves allow for recreational fishing; and, approximately 85 percent allow for recreational hunting.

Funding the acquisition of coastal land protects research, education and recreational opportunities; water quality and quantity; flood storage areas; and critical fish and wildlife habitat. Coastal and estuarine habitats are consistently ranked as having the highest need for protection by national non-profits and State assessments. These places are also under the most intense development pressure as people

continue to move to the coast in search of jobs and a high quality of life. This land is expensive, and is becoming scarce. PAC's Federal investment are often the critical seed monies necessary to attract other pots of private, State, local, and nonprofit funds.

PAC funding allows reserves to be a catalyst in their communities for conservation. Of the 1.3 million acres that are currently a part of the reserve system, over 500,000 of those acres are wetlands. Wetlands provide essential services to all Americans; they are fish and bird sanctuaries, trap pollutants, store carbon, and act as sponges to reduce flooding. This ability to store flood waters enables wetlands like salt marshes to reduce a community's storm damages. These marshes reduce the risk of flood exposure by 50 percent for people within 2/3 of a mile of these areas, while also reducing property losses in upstream communities. Reserves are critical coastal areas for protecting communities against storms and floods, especially along the eastern seaboard and the Gulf of Mexico. For example, \$625 million in property damages were avoided during Hurricane Sandy due to coastal wetlands protecting property and over 1,300 miles of roads. Ten NERRs were hit by that storm, contributing to the protection provided by these habitats. While studies of the impact of 2017 storms are not completed, they did include the second (Harvey), third (Maria), and fifth (Irma) most costly storms to hit the U.S.

In addition to the preservation of critical coastal lands, NERRS PAC funds also in the increase of local construction jobs.

CONCLUSION

NERRA greatly appreciates the past support the subcommittee has provided. This support is critical to sustain and increase the economic viability of coastal and estuary-based communities, businesses and industries.

With NERRA's fiscal year 2020 request of \$30 million for the NERRS Operations and \$4 million for NERRS PAC, the program will be able to enhance delivery of credible scientific research and translation to local coastal communities around the country.

Thank you for the opportunity to present these remarks. On behalf of NERRA, I would be happy to answer questions or provide additional information to the subcommittee.

[This statement was submitted by Lisa Auermuller, President.]

PREPARED STATEMENT OF THE NATIONAL FISH AND WILDLIFE FOUNDATION NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Chairman Moran, Ranking Member Shaheen and Members of the subcommittee:

Thank you for the opportunity to submit testimony regarding fiscal year 2020 funding for the National Fish and Wildlife Foundation (NFWF). We respectfully request your approval of robust funding throughout the National Oceanic and Atmospheric Administration's (NOAA) budget, particularly for the National Ocean Service and National Marine Fisheries Service to allow for continued and expanding partnerships that deliver high quality ocean and coastal conservation.

NFWF was established by Congress in 1984 to foster public-private partnerships to conserve fish, wildlife and their habitats. NFWF matches Federal dollars with non-Federal dollars, averaging at least three private dollars for each Federal dollar. NFWF leverages the Federal investment while building consensus and emphasizing accountability, measurable results, and sustainable conservation outcomes. fiscal year 2020 funds will allow NFWF to uphold our mission and expand our successful and expanding partnerships with NOAA.

NFWF has partnered with NOAA since 1996. We have many programs that are robust, and we continue to grow the NOAA partnership as new priorities emerge.

EXAMPLES OF NFWF/NOAA PARTNERSHIPS

Coral Reef Conservation

Since 2000, NFWF has partnered with NOAA and U.S. Fish and Wildlife Service (FWS) to respond to the alarming decline in both the quantity and productivity of the world's coral reef ecosystems through multiple coral conservation initiatives that aim to improve management, increase public awareness, and reduce threats to coral reefs. NFWF works with local, State, Federal and regional partners to achieve its goals in coral conservation and bolsters multi-agency initiatives like the U.S. Coral Reef Task Force Watershed Partnership Initiative. The program works to support

reef resiliency by reducing negative impacts from unsustainable fishing and land-based pollution.

To date, NFWF has supported projects for coral reef conservation totaling over \$43 million for imperiled coral species. Funds have assisted broad-scale coral reef management by establishing new techniques for assessing and monitoring reef health and new fishery management models. Site-specific initiatives have developed and implemented watershed management plans, reduced sediment erosion through stream bank stabilization, provided incentives or best management practices on agricultural lands, and supported capacity-building of management and conservation organizations to sustain conservation outcomes.

Fishing for Energy

Fishing for Energy is a partnership between NFWF, NOAA's Marine Debris Program, Covanta energy company, and Schnitzer Steel Industries. The Fishing for Energy partnership works to address the problem of derelict and retired fishing gear in two ways: by providing commercial fishermen with no-cost opportunities to dispose of gear, and by offering grant support for gear innovations to prevent loss and reduce impact. By assisting in prevention and removal of derelict fishing gear, Fishing for Energy restores the quality of marine and coastal habitats and supports the communities and industries that rely on these resources.

Through June 2018, the Fishing for Energy partnership has provided removal services at 55 ports in 12 States, collecting nearly 4 million pounds of fishing gear. Gear collected at the ports is first sorted at Schnitzer Steel Industries for metals recycling, and the remaining non-recyclable material is converted into energy at Covanta locations.

Sea Turtle Conservation

NFWF's Sea Turtle Program is a 10-year partnership with NOAA and FWS that guides conservation investments that measurably improve the current recovery trajectory of seven endangered sea turtle populations in the Western Hemisphere: leatherbacks, Kemp's ridleys, loggerheads, and hawksbills in the Northwest Atlantic and leatherbacks, loggerheads and hawksbills in the Eastern Pacific.

By reducing harmful coastal lights, preventing poaching, and controlling predation, NFWF projects have increased the productivity of over 100 miles of priority nesting beaches, allowing hundreds of thousands of new hatchlings to make it to the sea. NFWF's in-water efforts to implement safer fishing gear practices reduced sea turtle bycatch by 50 to 100 percent, not only in the United States, but in Canada, Mexico, and Peru, saving thousands of turtles annually. NFWF has also supported global priority setting, methods standardization and bycatch assessments to increase the efficiency of investments in sea turtle conservation world-wide.

Fisheries Innovation Fund and Electronic Monitoring and Reporting

NFWF and NOAA launched the Fisheries Innovation Fund in 2010 to foster innovation in fisheries and seafood production in order to protect livelihoods and provide sustainable access to fisheries while also rebuilding fish stocks. The fund supports the participation of fishermen and their communities in securing sustainable fisheries in the United States.

Fisheries Innovation Fund funding priorities include bycatch reduction, recreational fisheries and offshore aquaculture including voluntary activities to build community capacity and encourage sustainable use practices. Most projects have originated locally to address needs, challenges and opportunities at the community level.

The Electronic Monitoring and Reporting (EMR) grant program funds projects to modernize fishery data collection. Innovation and technology have the potential to bring down the cost of fishery monitoring; increase the speed, reliability and transparency of fisheries data; and enable managers and fishermen to address management challenges more collaboratively.

High quality, timely and accurate fisheries information is critical to maintaining sustainable U.S. fisheries. Fishermen and seafood marketers are increasingly using information about their fishing activity to improve the efficiency and effectiveness of their operations and to satisfy their customer demands for legally and sustainably caught seafood.

National Coastal Resiliency

NFWF's partnership with NOAA on the National Coastal Resiliency Fund is restoring, increasing and strengthening natural infrastructure—the natural resources and landscapes that help absorb the impacts of storms and floods—to protect citizens and coastal communities while also enhancing habitats for fish and wildlife.

Resilient communities are better prepared to adapt to changing natural resource conditions, infrastructure threats and impacts to local economies.

Thanks to bipartisan efforts and support from Congress, NFWF and NOAA are investing approximately \$30 million in Federal funds in 2018—matched by \$38 million in private funding and grantee match for a total conservation investment of \$67 million—toward the restoration or expansion of natural features such as coastal marshes and wetlands, dune and beach systems, oyster and coral reefs, forests, coastal rivers, and barrier islands that minimize the impacts of storms and other naturally occurring events on nearby communities. Additionally, NFWF and NOAA just announced the request for proposals for the \$30 million 2019 resiliency fund, which is likely to attract similar levels of matching funds.

Restoration projects that help reduce regional threats are a key component of this program. Examples include storm surge along the East and Gulf Coasts, subsidence in the Gulf and Mid-Atlantic Coasts, stormwater management in the Great Lakes, inland flooding that directly impacts the West coasts, and the combination of inland flooding and ocean surge for islands such as Hawaii. NFWF and NOAA also promote innovation in addressing resiliency through the program.

NFWF is investing in resiliency planning and feasibility projects to build a pipeline of shovel-ready projects in the future. NFWF also leads significant monitoring and evaluation efforts that measure the enhanced resilience of the restored coastal systems to improve understanding of which activities are associated with the greatest and most cost-effective reductions in storm risk and storm damage.

National Marine Monuments—National Marine Sanctuary Research and Innovation Grants

One of the challenges for NOAA and its partners in working in marine sanctuaries is gaining access to remote locations. Past agency funding only allows for a single voyage to address multiple needs and locations per year, making it difficult to do the in-depth studies that managers need. NFWF and NOAA initiated a new model for investments to go deeper, learn more and further expand the existing program and research dollars that are currently invested to maximize the conservation impact.

The partnership supports collaborative research and conservation actions to galvanize each year's investments around a theme. For example, prioritized research could focus on a key species or geographic area of the monument, or target actions to address a key threat that has been prioritized. This maximizes research/management collaboration and outreach opportunities.

NFWF BACKGROUND

NFWF was established by Congress in 1984 to catalyze private investments to conserve fish, wildlife and their habitats. NFWF raises private funds not only to leverage Federal dollars, but also to support the associated management costs of implementing the Federal funds. Over the past 35 years, NFWF has invested \$5.3 billion in to more than 17,500 projects while partnering with more than 4,500 organizations.

NFWF remains fully transparent and is required by law to notify Congress 30 days in advance of every grant that exceeds \$10,000 in Federal funds. Details of all projects awarded during fiscal year 2018 can be found in NFWF's annual investment guide and all of NFWF's grants can be found on our website: <https://www.nfwf.org/whatwedo/grants/search/Pages/Grant-Search.aspx>

In fiscal year 2018, NFWF was audited by an independent accounting firm and they issued an unqualified report with no material weaknesses identified and no deficiencies identified. This is the TENTH consecutive year of unqualified audits. In addition, NFWF has continually qualified as a low risk auditee under OMB guidelines.

In fiscal year 2018, through voluntary discretionary cooperative agreements, NFWF partnered with 16 Federal agencies or departments and more than 30 corporations to support implementation of Federal conservation priorities. These efforts focused on working landscapes, private lands, natural resource conservation, coastal resiliency and community-based restoration.

CONCLUSION

For more than three decades, NFWF has been at the forefront of national conservation activity. With our partners, NFWF has contributed to some of the Nation's most important conservation programs, invested millions in worthy and successful projects, and spearheaded programs to conserve our Nation's most treasured natural resources. We have a successful model of coordinating and leveraging Federal funds

to attract support from the private sector to address the most significant threats to fish and wildlife populations and their habitats.

Chairman Moran, Ranking Member Shaheen and Members of the subcommittee, we greatly appreciate your continued support and stand ready to answer any questions you or your staff might have.

[This statement was submitted by Greg E. Knadle, Vice President, 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), which is America's oldest and largest national nonprofit organization whose resources are exclusively dedicated to promoting excellence in the delivery of legal services in order to advance access to justice for all. We are grateful for the opportunity to provide comments to the committee regarding the Legal Services Corporation, for which we request *at least* \$683 million, the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance grant program, for which we recommend \$2 million, the John R. Justice Student Loan Repayment Assistance program, for which we recommend \$25 million, and civil legal assistance for victims of domestic and sexual violence, for which we recommend \$57 million.

LEGAL SERVICES CORPORATION

LSC is America's investment in its promise of equal justice. LSC distributes 94 percent of its appropriation directly to 133 organizations providing civil legal aid to people in every U.S. State and territory who have legal problems with life-altering potential consequences. Family and housing cases are the most common. Without access to legal help in these matters, victims of domestic violence can be denied safety from an abusive parent or spouse, and families can lose their homes through unnecessary eviction or foreclosure. LSC also enables legal aid programs to respond quickly and effectively to emerging challenges facing low-income and middle-class Americans. The new LSC task forces on the opioid crisis and disaster recovery are helping guide legal aid programs in confronting these complex large-scale issues that have created immeasurable damage to so many communities across our country.

There is a wealth of data that demonstrates how access to civil legal aid creates positive long-term outcomes for clients, such as increased housing stability and income levels, lower incidence of mental health problems in veterans,¹ and improved "safety, psychological well-being, and economic self-sufficiency" for victims of intimate partner violence.² Despite this evidence, and despite the current strength of our economy, the need for legal assistance continues to dramatically outweigh the amount we choose to spend on it, which is the reason for our request that this committee significantly expand the appropriation for LSC.

Data published by LSC in 2017 revealed that the \$385 million appropriated for LSC the previous year only enabled grantees to fully address roughly one third of legal problems brought to them, and that 41 percent received no service at all.³ Most of those who did not receive services were turned away because the program from which they sought help did not have sufficient resources to assist. Based on this data, we developed an approximate average cost of service per case, and using this number, estimated the amount that would have been needed to fully address every eligible legal problem: \$683 million, adjusted for inflation. In estimating the cost of addressing every problem, we needed to make a number of generalizations and assumptions about the cost of service per case. In recognition of the budgetary constraints under which the Appropriations Committee operates, we intentionally took a highly conservative approach to those calculations.⁴ Our request is therefore

¹ Tsai, J., Middleton, M., Villegas, J., Johnson, C., Retkin, R., Seidman, A., Sherman, S., and Rosenheck, R. (2017) "Medical-Legal Partnerships At Veterans Affairs Medical Centers Improved Housing And Psychosocial Outcomes For Vets", *Health Affairs* 36 (12).

² Hartley, C., and Renner, L. (2016) "The Longer-Term Influence of Civil Legal Services on Battered Women", U.S. Department of Justice.

³ Legal Services Corporation (2017) *The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans*.

⁴ The report delineates civil legal problems that were fully addressed and problems that were not addressed "to the extent necessary to fully address the clients' legal needs." Our calculation includes an assumption that fully addressing an "average" legal problem costs 1.5 times the amount it costs to provide inadequate service. Particularly because the latter includes even the

Continued

likely to understate, to a significant extent, the amount grantee organizations would actually need. For this reason we request “at least” \$683 million.

Additionally, we emphasize that the appropriation level we request would not meet the total need for civil legal aid. Across the country, only an estimated 20 percent of low-income Americans even seek assistance with their civil legal problems, often because they are unaware that resources exist to help them.⁵ In fact, the level we recommend in this testimony is 27 percent *lower* than funding would have been had the LSC appropriation simply kept pace with inflation since 1980,⁶ and the fiscal year 2019 appropriation is *less than half* of the 1980 level in inflation-adjusted dollars.

This diminished level of funding for LSC is not only harmful to communities that rely on civil legal assistance, but it is economically short-sighted. There is a direct, measurable, and significant return on investment from civil legal aid. In Alabama, for example, analysis demonstrates that for every dollar spent on civil legal aid, communities in the State received \$8.84 in direct and long-term financial benefits.⁷ This return includes a reduction in taxpayer spending on community services that results from provision of legal help, such as on housing and other support costs for a family that would have been forced out of their home were it not for access to an attorney.

While there are sources of funding for civil legal aid outside of LSC, these resources are distributed in a highly uneven manner. Rural areas are routinely underserved, but through LSC the Federal appropriation can be targeted to meet the areas of most extreme need. At the same time, the civil legal aid infrastructure that is built around LSC facilitates the investment of private resources into expanding access to civil legal assistance, multiplying the impact of the Federal appropriation. Private attorneys contribute more than a week of legal services pro bono on average each year,⁸ but they are only able to volunteer in such volume because the existence of LSC grantees that provide needed training, supervision, and access to clients. LSC also invests directly in expanding private attorney involvement through its Pro Bono Innovation Fund.

By continuing to underfund civil legal aid, we not only fail to preserve the foundation of American democracy but also cause significant and severe harm to the people and communities for whom access to a lawyer can be the difference between poverty and opportunity, sickness and health, and even life and death. We ask that you take the first step toward fully meeting our country’s most fundamental promise by providing \$683 million for LSC in fiscal year 2020.

TRIBAL CIVIL AND CRIMINAL LEGAL ASSISTANCE, TRAINING AND TECHNICAL ASSISTANCE

We urge this subcommittee to support the work done on behalf of Native Americans by Indian Legal Services by maintaining funding within the Department of Justice, Office of Justice Programs, State and Local Law Enforcement Assistance 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,” as Congress provided \$37.5 million for in the fiscal year 2019 Consolidated Appropriations Act, or within a Tribal set-aside percentage of Office of Justice Programs accounts, as the administration has proposed in the fiscal year 2020 budget request in section 210.

For the past 8 years, through fiscal year 2018, a consortium of 24 Indian Legal Services programs connected with the Legal Services Corporation and operating in 23 States has been awarded funding under the TCCLA grants program. In addition to using TCCLA funds to provide legal representation to thousands of American Indian and Alaska Native individuals in Tribal and State courts, Indian Legal Services programs are currently assisting more than 160 Tribal governments and/or Tribal judicial systems to enhance or develop their justice systems.

most minimal level of assistance, it is highly unlikely that this assumption is accurate and the average difference in cost between full and partial service is likely to be far higher in reality. The effect of this conservative assumption is to understate the actual resources required to fully address those problems that are currently addressed inadequately.

⁵Legal Services Corporation (2017) *The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans*.

⁶Houseman, A. & Perle, L. E. (2018) *Securing Equal Justice for All: A Brief History of Civil Legal Assistance in the United States*.

⁷Community Services Analysis, LLC (2015) *Alabama Legal Aid Social Return on Investment Analysis*.

⁸American Bar Association (2018) *Supporting Justice: A Report on the Pro Bono Work of America’s Lawyers*.

Examples of the Indian Legal Services programs' Tribal civil justice assistance work done under TCCLA awards 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 has included family law, probate, employment, disability benefits claims, public housing, property disputes, debt collection, child welfare and juvenile delinquency matters; *guardian ad litem* work in high conflict custody, guardianship, and parental termination cases; representation of families in Indian Child Welfare Act cases in State court; and addressing the impact on individuals and families from substance abuse and correlated incidents of criminal activity by reforming Tribal sentencing guidelines.

The Indian Legal Services programs' Tribal criminal work under TCCLA has included assisting Tribes with revisions to their criminal codes for compliance with these statutes, as well as drafting and updating codes, policies and procedures, and drafting of civil and criminal codes, including children's codes, and rules of procedure; 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. Lay advocate and peacemaker trainings have been done with Tribal colleges and university law schools. Several Indian Legal Services programs have worked with the Tribes and their Tribal courts to establish "Wellness Courts" in conjunction with the local State courts. In these instances, a defendant appears before a Tribal court judge and county district court judge simultaneously. 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). The programs provide the only public defender service available in at least 46 Tribal courts.

In fiscal year 2020, whether Congress provides funding to the DOJ for Indian Country Tribal justice and law enforcement programs as a Tribal set-aside of a percentage of overall DOJ funding, or in an overall sum as the \$37.5 million appropriated in the fiscal year 2019 Consolidated Appropriations Act for "assistance to Indian Tribes," we request that funding, bill and report language be included directing that some funds 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.

JOHN R. JUSTICE STUDENT LOAN REPAYMENT ASSISTANCE PROGRAM

Public defenders fulfill the constitutional right to counsel; they are essential to due process and our concept of liberty. They protect the rights of defendants in criminal cases and work to ensure that case outcomes are fair and just. A law degree is a requirement of all public defenders, 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. The John R. Justice program can provide relief from this debt, and as such support the recruitment and retention needs of public defender and prosecutor offices, by contributing to an individual's monthly student loan payments. However, the fiscal year 2019 appropriation for John R. Justice was just \$2 million and this level of funding severely limits the scope and effectiveness of the program. We therefore request that this subcommittee fully fund the John R. Justice program at the authorized amount of \$25 million for fiscal year 2020.

VIOLENCE AGAINST WOMEN ACT (VAWA) PROGRAMS

More than "1 in 3 women (35.6 percent) and more than 1 in 4 men (28.5 percent) in the United States have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime."⁹ VAWA programs provide vital services that protect victims and support interventions that improve short and long-term outcomes for individuals and families who have experienced domestic or sexual abuse. The incidence of intimate partner violence has declined sharply since the passage of

⁹National Intimate Partner and Sexual Violence Survey: 2010 Summary Report, U.S. Department of Health and Human Services, Washington, DC (2010).

VAWA.¹⁰ We therefore request a significant increase in the appropriation for all VAWA programs. None of this appropriation should be funded by the Crime Victims Fund administered by the Department of Justice Office for Victims of Crime. Doing so self-evidently reduces the total amount available to serve victims of crime and jeopardizes the sustainability of Crime Victims Fund over the long-term.

In particular, we request that the Civil Legal Assistance for Victims Grant Program be fully funded. Civil legal aid is a critical component of a continuum of support for victims of domestic violence and sexual assault. Common legal needs experienced by individuals and families who have experienced or are experiencing domestic violence include obtaining protective or restraining orders that protect their immediate physical safety, representation through the divorce process as well as help in custody, visitation, and child support matters. As noted above, legal assistance not only provides physical protection but also creates improved psychological and economic outcomes for survivors over the long term. Considering the seriousness of the consequences for victims who lack access to legal help, we request that Congress fully fund the VAWA Civil Legal Assistance for Victims Grant Program at the authorized level of \$57 million.

[This statement was submitted by Don Saunders, Vice President, Civil Legal Services.]

PREPARED STATEMENT OF THE NATIONAL MARINE SANCTUARY FOUNDATION
CORAL REEF CONSERVATION PROGRAM APPROPRIATIONS

Mr. Chairman and Members of the Subcommittee on Commerce, Justice, Science and Related Agencies, thank you for the opportunity to submit written testimony regarding appropriations for National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program in fiscal year 2020. We respectfully request that you prioritize requests for \$30.6 million for Coral Reef Conservation within NOAA's Operations, Research and Facilities (ORF) account.

Coral reefs are among the most biologically diverse ecosystems in the world. They provide economic benefits and vital ecosystem services such as food, recreation, marine habitat, coastal protection, and climate regulation. We are requesting \$3 million in order to support coral monitoring, research and restoration in the Florida Keys National Marine Sanctuary and connected ecosystems. Florida's coral reefs are experiencing a multi-year outbreak of stony coral tissue loss disease. This event is unique due to its large geographic range, extended duration, rapid progression, high rates of mortality and the number of species affected. The disease is thought to be caused by bacteria and can be transmitted to other corals through direct contact and water circulation. Researchers are working to identify potential pathogens and relationships with environmental factors, strategies to treat diseased colonies, and identify genotypes of corals that are resistant to the disease in order to aid in restoration. With less than 6 percent of the total Florida Keys reef tract remaining, protecting and restoring corals is vital to conserving our only U.S. living coral reef and a sustaining an ecosystem critical to the Florida and U.S. tourism economy. We also believe that with this investment the Florida Keys can become a living laboratory for coral restoration. We must enable the best and the brightest of our coral scientists and researchers to work together to restore and protect America's underwater national treasures.

Thank you for this opportunity to provide written testimony to the Senate Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies.

[This statement was submitted by Ms. Kristen J. Sarri, President and CEO.]

PREPARED STATEMENT OF THE NATIONAL MARINE SANCTUARY FOUNDATION
OFFICE OF NATIONAL MARINE SANCTUARIES APPROPRIATIONS

Mr. Chairman and Members of the Subcommittee on Commerce, Justice, Science and Related Agencies, thank you for the opportunity to submit written testimony regarding appropriations for the Office of National Marine Sanctuaries in fiscal year 2020. As supporters, stakeholders, and partners of America's National Marine Sanctuary System, we strongly urge Congress to support the Office of National Marine

¹⁰Modi, M. N., Palmer, S., & Armstrong, A. (2014). The Role of Violence Against Women Act in Addressing Intimate Partner Violence: A Public Health Issue. *Journal of Women's Health* (2002), 23(3), 253–259.

Sanctuaries at no less than \$65.5 million in fiscal year 2020. The same level requested by 101 Members of Congress in their bipartisan House dear colleague letter. We respectfully request that you prioritize requests for:

- \$57 million for Sanctuaries and Marine Protected Areas, within the National Oceanic and Atmospheric Administration’s (NOAA) Operations, Research, and Facilities (ORF) account; and,
- \$8.5 million for Marine Sanctuaries Construction, within NOAA’s Procurement, Acquisition, and Construction (PAC) account.

The National Marine Sanctuary Foundation, California Marine Sanctuary Foundation (CA), Cordell Marine Sanctuary Foundation (CA), Greater Farallones Association (CA), Monterey Bay National Marine Sanctuary Foundation (CA), Friends of Malloys Potomac (MD), Friends of Thunder Bay National Marine Sanctuary (MI), Gray’s Reef National Marine Sanctuary Foundation (GA), Olympic Coast National Marine Sanctuary Foundation (WA), and Florida Keys National Marine Sanctuary Foundation (FL) strongly support funding the National Marine Sanctuary System at these levels. Our organizations work together to conserve treasured places in our oceans and Great Lakes for current and future generations of Americans to enjoy. We promote citizen science, research, conservation, education, and community engagement to protect coral reefs and marine habitats, conserve places of cultural significance, and preserve our maritime history and heritage. Partnerships are critical to the National Marine Sanctuary System. Through collaboration with local communities, government, corporations, and individual donors, our organizations increase our impact.

Today, the National Marine Sanctuary Systems consists of 13 national marine sanctuaries, and NOAA ONMS co-manages two marine national monuments, totaling over 620,000 square miles. These sites conserve some of the Nation’s most critical natural, historic, and cultural resources in the ocean and Great Lakes such as the USS Monitor, Midway Island, sacred heritage sites for Native Americans, and some of the largest and oldest corals in the world. They are home to millions of species, preserve more than 300 shipwrecks and our Nation’s maritime heritage, and promote public access for exploration and world-class outdoor recreation and enjoyment for future generations. Sanctuary visitor centers, vessels, and facilities are key assets for communities; stimulate public-private partnerships on emerging technologies, cutting edge science, and hands-on education; and attract millions of visitors to the coasts each year.

Across all national marine sanctuaries, about \$8 billion annually is generated in local, coastal economies from diverse activities like commercial fishing, research, education and recreation-tourist activities. Over 42 million people visit sanctuaries each year. From restaurants and hotels, to aquariums and kayak operators, the success of many businesses, millions of dollars in sales and thousands of jobs, directly depend on thriving national marine sanctuaries. As a travel destination, few places on the planet can compete with the diversity of the National Marine Sanctuary System. The majority of national marine sanctuaries’ waters are open to recreational activities, which also allows for considerable benefits to local economies. Public-private partnerships bring innovative approaches to conserving our natural and cultural resources. Collaborations among universities, institutions, non-profits, businesses, and enforcement entities at local, State, and national levels leverage resources and build relationships to have a greater impact for communities and the economy. Below are a few examples of the value of sanctuaries to local economies:

- In Washington State, \$101.6 million was spent on recreation in the Olympic Coast National Marine Sanctuary. This spending generated, with multiplier impacts, \$128.2 million in output, \$78 million in value-added (gross regional product), and \$46.1 million in income, which supported 1,192 jobs.
- Along the California coast, \$155.6 million on average is spent annually on recreational fishing in the State’s four national marine sanctuaries. This spending supports an average of 1,400 jobs, and generates \$213.1 million in sales and output and \$74.6 million in income in local communities.
- In the Florida Keys, more than 33,000 jobs are supported by ocean recreation and tourism, accounting for 58 percent of the local economy and \$2.3 billion in annual sales.
- In Michigan, the Thunder Bay National Marine Sanctuary is the focus of its tourism attractions and local development strategy from the Sanctuary Inn to the Great Lakes Maritime Heritage Center, to the STEM education opportunities through the Alpena Community College and local high school ROV competitions, to its glass bottom boat tours to experience the shipwrecks without getting wet. Over half (58 percent) of visitors to Alpena came to visit Thunder Bay National Marine Sanctuary, which is the region’s most popular attraction, boasting nearly 100,000 visitors per year.

—In Massachusetts, over \$126 million in whale watching revenue and 600 jobs at 31 businesses resulting from less than \$2 million invested in the Stellwagen Bank National Marine Sanctuary off of Massachusetts. Virtually all of Massachusetts whale watching occurs in Stellwagen Bank National Marine Sanctuary, recently named one of the premiere whale watching locations in the world.

Balancing multiple uses on the water and engaging many constituencies in the community, sanctuaries provide a comprehensive, highly participatory approach to managing and conserving marine and Great Lakes resources. National marine sanctuaries are the blue backyards for tens of thousands of citizens and volunteers who live along the coast or in the watersheds of these treasured sites. Public participation is a hallmark of sanctuaries and underscores their dedication to civic engagement and leadership.

Every year, thousands of volunteers devote their time and effort to protect sanctuaries for future generations. They represent the best of America and what starts as one passionate citizen becomes an empowered community. Sanctuary volunteer programs are nationally recognized and awarded for their work increasing awareness, engaging the community, promoting stewardship, and providing critical information and support for science, research, education, and management. In 2018, sanctuary volunteers contributed over 130,000 hours across the system, contributing more than \$3.16 million in valuable support.

In 2022, the Nation will mark the 50th anniversary of the National Marine Sanctuaries Act. As the Nation moves towards this anniversary, it is a unique opportunity to invest in America's public waters, and the communities and businesses that depend upon them. We hope that the appropriations request for fiscal year 2020 will serve as the beginning of a deliberate and strategic investment in national marine sanctuaries building up to the 50th Anniversary. Robust funding will ensure sound management of these treasured places and the mission critical tools, like small boats; strengthen community engagement and stewardship of sanctuaries; and improve our understanding of marine and Great Lakes issues.

For sanctuary Operations, Research and Facilities (ORF) funding, we urge Congress to provide \$57 million. Because sanctuaries are located offshore, public awareness and education about the sites and the resources they conserve are critical, as is technology to let Americans look "under the surface." Therefore, we are proposing \$3 million to support growth in community-based sanctuaries, respond to the groundswell of communities nationwide seeking to expand sites or propose and designate new ones, and increase funds for management at existing sanctuaries. To support this effort, the proposed increase includes \$1 million to for national blue business stewardship efforts for marine sanctuaries. Similar to America's national parks, marine sanctuaries support tourism and a robust recreational industry. Such efforts will also set the stage for the 50th anniversary of the National Marine Sanctuary System. We are requesting \$2 million to conduct cooperative conservation science and research programs within sanctuaries that will improve resources management and advance innovative public-private partnerships. Finally, the requested increase includes \$2 million for public education, outreach, and awareness efforts at individual sites in the National Marine Sanctuary System to show how the sanctuaries can serve as a model for protecting marine ecosystems around the world, explore beyond our horizons using new technologies, and connect communities to their marine and Great Lakes wonders.

Sanctuary visitor centers, vessels, and facilities are key assets for communities; stimulate public-private partnerships on emerging technologies, cutting edge science, and hands-on education; and attract millions of visitors to the coasts each year. These platforms act as the public face of proactive management and protection, promoting partnerships for science and education, and are a vital link between sanctuaries and the millions of Americans who visit the coast each year.

For sanctuary Procurement, Acquisition, and Construction (PAC) funding, we propose \$8.5 million. This request includes \$4.5 million to replace vessels critical to operations, management, and enforcement, including the replacement of the R/V Tatoosh in the Olympic Peninsula, WA and the R/V Rachael Caron in the Florida Keys, FL. This is the first year in a long-term effort to recapitalize the ONMS Small Boat Fleet. Last April, ONMS released its Small Boat Fleet Assessment. Every national marine sanctuary relies on its NOAA small boats to access its protected resources and implement management plans. The small boat fleet also supports partnerships to help improve understanding of our marine and Great Lakes environments. Increasing demands on an aging fleet are leading to higher operating costs as well as near and long-term challenges to maintaining safe, efficient and effective operations. For managers and partners to continue to assess, monitor, research, and protect our oceans and Great Lakes, recapitalizing aging vessels across the National

Marine Sanctuary System in addition to upgrades, retrofits, and life cycle extensions is critical. Investment is necessary now for new vessels. The request also includes \$2 million for visitor centers, facilities, and signage improvements and ADA compliance; and \$2 million in a Sanctuary Challenge Fund. The Sanctuary Challenge Fund is an innovative approach, based on the model of the highly successful National Park Service Centennial Fund, to finance signature projects and programs across the National Marine Sanctuary System. The public investment would be matched at least 1:1 by non-Federal donations to address the backlog of needs for sanctuary facilities that enhance the sanctuary visitor experience as part of the ramp up to the 50th anniversary.

Our national marine sanctuaries are national treasures. The National Marine Sanctuary Foundation and our network of community leaders strongly urge Congress to invest in community-based national marine sanctuaries by prioritizing a budget of no less than \$65.5 million in fiscal year 2020. Investments in these areas support local economies and jobs in a diversity of sectors from education to outdoor recreation to fishing and underscore the value of communities in America's iconic underwater places.

Thank you for this opportunity to provide written testimony to the Senate Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies.

[This statement was submitted by Ms. Kristen J. Sarri, President and CEO.]

PREPARED STATEMENT OF THE NATIONAL MENTORING PARTNERSHIP (MENTOR)

YOUTH MENTORING GRANT (DOJ)

On behalf of MENTOR: The National Mentoring Partnership (MENTOR), our network of Affiliates, and youth mentoring programs throughout the country, I thank Chairman Moran and Ranking Member Shaheen for the opportunity to provide testimony in support of a critical Federal investment in America's young people. My testimony will focus on the Part G Youth Mentoring Program housed in the Office of Juvenile Justice and Delinquency Prevention (OJJDP) at the U.S. Department of Justice (DOJ). MENTOR and our partners are calling on your committee to continue your bipartisan support of the Youth Mentoring Program with an investment of \$120 million in fiscal year 2020. This investment will make it possible for quality mentoring organizations using evidence-based practices to better meet the mentoring needs of many of our Nation's most at-risk youth.

MENTOR is the unifying national champion for expanding quality youth mentoring relationships and connecting volunteers to mentoring opportunities in their local communities. In a time when 1 in 3 young people are growing up without a mentor, MENTOR seeks to close this "mentoring gap" and ensure our Nation's young people have the caring adult support they need to succeed at school, in community, and in the workforce. We seek to leverage resources and provide the tools and expertise that local programs—whether in schools, nonprofits, faith-based institutions, or the private sector—require to provide high-quality mentoring for young people who need it most, build greater awareness of the value of mentors, and positively inform public policy in order to bring support and opportunity to young people in need.

I write this testimony on behalf of the thousands of mentoring programs and millions of volunteer adult mentors that serve our communities each day, as well as the millions of young people in the United States still waiting to find the supportive caring adults they need to thrive. I would also like to thank the Senate Commerce, Justice, and Science, and Related Agencies Subcommittee for its history of supporting these critical Federal funds for evidence-based mentoring and demonstrating leadership in expanding pathways for young people.

The Benefits of Quality Youth Mentoring

Youth mentoring is a simple, yet powerful concept: a caring adult provides guidance, support, and encouragement to help a young person achieve success in life. Research confirms that quality evidence-based mentoring relationships have powerful positive effects on young people in a variety of personal, academic, and professional situations. Mentoring is a strategic intervention and prevention-based strategy that helps foster positive outcomes for young people from all backgrounds and Zip codes. Mentoring is proven to play an important role in the following areas of support for young people:

Reducing Unsafe or Risky Behaviors: Mentors provide young people with consistent support as they encounter the daily challenges of navigating their lives. Mentors serve to help young people make healthy decisions and stay away from

high-risk behaviors. Young people who meet regularly with their mentors are 46 percent less likely than their peers to start using illegal drugs and 27 percent less likely to start drinking. Mentors also provide guidance to positive behaviors that could support growth and development in a young person. Young adults who face an opportunity gap but have a mentor are 81 percent more likely to participate regularly in sports or extracurricular activities than those who do not.

Workforce Development: Mentoring helps develop the future workplace talent pipeline by preparing young people for careers through exposure and 21st century skill-building. One study estimates that the human potential lost as a result of the educational achievement gap is the economic equivalent of a permanent national recession. There are far too many young people who have not had access to the opportunities that having a mentor opens to professional and career development. Mentoring helps young people set career goals and take the steps to accomplish those goals. Through their mentors, young people are also introduced to resources and organizations they may not be familiar with, providing them with new networks as well as methods to find jobs and internships.

Educational Achievement: According to the Department of Education, during the 2013–14 school year, over 6.8 million students (14 percent of all students) were chronically absent. Students who are chronically absent are more likely to fall behind academically, particularly in reading, more likely to have increased behavioral issues and more likely to drop out of school. Young people who are chronically absent benefit exponentially from having a mentor to aid regular attendance and provide the young person academic and emotional support. Students who meet regularly with their mentors are 52 percent less likely than their peers to skip a day of school and 37 percent less likely to skip a class. Mentoring provides young people with an important support that helps develop positive attitudes towards school and reduce recurring behavior problems. Young adults who face an opportunity gap but have a mentor are 55 percent more likely to be enrolled in college than those who did not have a mentor.

Social Emotional Development and Mental Health: Mentoring provides young people with improved communications with their families and other caring adult relationships. A recent study showed that the strongest benefit from mentoring, and most consistent across risk groups, was a reduction in depressive symptoms. Mentoring promotes positive social attitudes and relationships. Mentored youth trust their parents and guardians more and communicate better. These benefits serve as building blocks for engagement in positive activities, increased school participation and improved attitudes.

Youth Mentoring ultimately provides much-needed social support, increased positive relationships with and perceptions of adults, life skills training, and access to social capital to young people who are in need of support leading them to positive and productive futures.

Closing the Mentoring Gap

While mentoring is an effective evidence-based intervention and prevention strategy for at-risk and high-risk young people, mentoring organizations across the Nation still face barriers in providing high-quality mentoring services. Thousands of young people remain on waitlists at organizations because of limited resources and funding for programs. Many programs also lack the training and technical assistance that could bolster their mentoring programs to better support young people and specifically high-risk young people. These two issues combined have provided many obstacles for mentoring programs, but with the critical support of both private and public funds mentoring organizations have been able to serve more young people.

One of the ways that mentoring programs have succeeded in decreasing waitlists is through support from the Youth Mentoring Program. The program focuses on prevention and interventions for at-risk youth and helps mentoring programs as they work to close the mentoring gap. These funds go directly to providing support for some of our highest risk young people, who without these kinds of interventions could likely become involved in negative behaviors and activities causing harm to themselves, their communities, and which take an economic toll. In a 2016 study conducted by MENTOR it was found that 75 percent of programs have a budget of under \$100,000. Mentoring programs work far beyond their financial capacity to serve young people, but with additional resources their reach expands exponentially and the quality of their services can strengthen through improved training and technical assistance. The individual cost per mentored youth has remained relatively steady over the past 20 years, however costs for high-risk groups of young people including those with mental health needs, teen parents, or victims of commercial

sexual exploitation, for example, require more resources and expertise, increasing the cost per youth in order to fully address their unique needs. Mentoring programs utilize Federal support in part to better serve the large number of young people who could benefit most from evidence-based mentoring.

Mentoring programs are able to safely serve young people when they are fully trained on the most up to date mentoring evidence and training. In 2015, through funds from the Youth Mentoring Program, The National Mentoring Resource Center (NMRC) was created to improve the quality and effectiveness of mentoring by supporting youth mentoring practitioners. MENTOR runs the National Mentoring Resource Center and provides free mentoring tools, program and training materials and no-cost, evidence-based technical assistance to mentoring programs, school districts, nonprofits and faith-based institutions across the Nation. This important resource has bolstered the ability of mentoring programs to serve young people from vulnerable populations including young people at-risk of entering the juvenile justice system, youth in foster care, and victims of commercial sex trafficking.

Research on youth mentoring demonstrates that, at a minimum, for every dollar invested in quality mentoring programs there is a return of at least three dollars. This positive return on investment reflects projected increases in lifetime earnings gained by leading at-risk youth down the path towards becoming productive adults. It also derives from dollars saved through reduced risky behaviors in young people, decreased school absence, high school graduation rates, and lowered risk of youth involvement in unsafe and costly behaviors.

Unfortunately, the Youth Mentoring Program is now the only remaining Federal grant exclusively dedicated to providing funds for evidence-based mentoring. Youth Mentoring Program funds have been awarded to national, multi-state and collaborative mentoring projects and programs who serve suburban, rural and urban populations. The flexibility of the grant has allowed organizations to use these funds to specifically tailor programs to their community's unique needs. This provides local control and specialized concentration on results that work best for each young person and their communities. As previously outlined, these funds also invest in research to learn what is most effective, bridging this research to practice, and driving quality and impact through hands-on community-based capacity building. These funds are simply invaluable in the ways that they affect youth development, educational achievement, and safe communities.

Without adequate resources and funding mentoring programs and ultimately America's young people do not have access to the caring adults they need to develop healthy, safe, and productive lives. It better weaves together our communities, drives greater understanding, enriches the lives of both parties, and efficiently leverages volunteers to drive impact backed by quality programs.

This request in support of \$120 million for the Youth Mentoring Program will allow more young people to have access to the important social, professional, and academic opportunities we hope to provide for all America's youth. The Youth Mentoring Program demonstrates a sound and an effective investment in evidence-based programs that works and will have definitive and measureable impact on closing the mentoring gap in America.

Thank you again for this opportunity to provide testimony on this critical Federal resource supporting young people.

[This statement was submitted by David Shapiro, Chief Executive Officer.]

PREPARED STATEMENT OF THE NATURAL SCIENCE COLLECTIONS ALLIANCE

NATIONAL SCIENCE FOUNDATION

The Natural Science Collections Alliance appreciates the opportunity to provide testimony in support of fiscal year 2020 appropriations for the National Science Foundation (NSF). We encourage Congress to provide the NSF with at least \$9 billion in fiscal year 2020.

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, make accessible, and study these resources, are a vital component of our

Nation's research infrastructure. Whether held at a museum, government laboratory or archive, or in a university science department, these scientific resources consist of 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. These data were used to construct models for the distribution of this mosquito under different climate scenarios to predict regions where the species may expand in the future. These predictions can help public health officials plan for potential disease outbreaks.
- 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.
- In 2018, 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 humans with traumatic brain injury. Because of the life history traits (behaviors) of woodpeckers, the researchers argue these birds may have evolved a level of resistance to traumatic head injuries that might offer insights about potential treatments for humans with traumatic brain injury.
- In 1993, a deadly 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.

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, studied, and curated more than one billion specimens within those collections. This work is on-going as new questions continue to be asked. The institutions that care for scientific collections are important research infrastructure for the United States that also provide students with hands-on training opportunities.

The NSF plays a unique role in protecting and expanding access to our Nation's scientific collections. NSF supports research that uses existing collections as well as studies that gather new natural history specimens. The 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.

NSF funds state-of-the-art 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 95 million specimens are now online, with millions more awaiting digitization. This effort involves biologists, computer scientists, and engineers in multi-disciplinary teams who develop innovative imaging, robotics, and data storage and retrieval methods, and projects using crowd-sourcing are engaging the broader public. These new tools 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 National Science Foundation and its efforts to support scientific and educational advances in natural science collections have always been in the national interest. 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. Please support funding of at least \$9 billion for NSF for fiscal year 2020.

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, President.]

PREPARED STATEMENT OF THE NATURE CONSERVANCY

PROGRAMS UNDER THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Thank you for the opportunity to comment on the fiscal year 2020 appropriations for the National Oceanic and Atmospheric Administration (NOAA). The Nature Conservancy is a non-profit conservation organization working in all 50 States and 72 countries to conserve the lands and waters on which all life depends. As the Nation enters the fiscal year 2020 budget cycle, the Conservancy acknowledges the need for fiscal restraint. However, the Conservancy also recognizes the critical role that oceans and coasts play in the lives of millions of Americans and in our Nation's economy. Each year the U.S. ocean and coastal economy contributes \$359 billion to the Nation's GDP and supports 3 million jobs. NOAA's funding keeps this ocean and coastal 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 coastal natural resources provide.

While the President's fiscal year 2020 Budget once again called for unwarranted cuts to the National Marine Fisheries Service and the National Ocean Service including the proposed elimination of "grants and programs supporting coastal and marine management, research, and education including Sea Grant," the Conservancy was encouraged by Congress' fiscal year 2019 omnibus funding levels to maintain and, in some cases, provide modest increases to these and other critical NOAA programs. Over the years and across many sites, NOAA has been an invaluable partner to the Conservancy. NOAA programs provide practical, community-oriented approaches to restoration, resource management, and conservation that align naturally with the Conservancy's mission. NOAA has made important strides in addressing key challenges, but much more remains to be done. We believe that the NOAA budget levels proposed by the Conservancy represent a prudent investment in our country's future and ask your support for the requests detailed below.

NATIONAL MARINE FISHERIES SERVICE

Fisheries and Ecosystem Science Programs and Services.—The Conservancy supports at least \$155.807 million. The Conservancy requests an increase of \$8.2 million from fiscal year 2019 to support two important grant programs—National Fish and Wildlife Foundation's Electronic Monitoring and Reporting grants (+\$3.5 million) and NOAA's Fisheries Information System program (+\$5.2 million)—that are helping fishermen, fishing councils and NOAA modernize outdated data systems. Good information about the status of fish stocks is essential for effective management. Systems for collecting fishery data tend to be paper-based, slow, expensive,

and prone to errors; they are long overdue for modernization. By supporting a modest increase in funding for these programs, Congress can expand the use of electronic monitoring and reporting into more commercial and recreational fisheries across the Nation. Also key is improving our understanding of the ecological and economic connections between fisheries and nearshore habitats. Funding for ecosystem-based solutions for fisheries management will provide tools and information to better target fisheries habitat restoration efforts.

Habitat Conservation and Restoration.—The Conservancy supports at least \$56.384 million, consistent with fiscal year 2019 funding. Coastal wetlands and nearshore waters produce the fish and shellfish that feed America. The health of these places is essential to the economic and social well-being of those who live, work, and recreate in coastal communities. NOAA and the Conservancy have partnered on over 150 habitat restoration projects across the U.S. Through the Community-based Restoration Program, that the administration proposes to eliminate, and the Habitat Blueprint Initiative, the Conservancy works closely with NOAA to restore the health of degraded habitats in places and ways that benefit not just local marine life, but communities and coastal economies. NOAA funding for coastal habitat restoration supports on average 15 jobs per million dollars spent and up to 30 jobs per million dollars spent on labor intensive restoration projects.¹ The several grants managed by this program are awarded on a competitive basis and typically leverage the resources and capacity of multiple partners. This work enhances our understanding of the connections between fisheries productivity and habitat, measures the effectiveness of conservation and restoration activities, and applies those lessons to improve future efforts. This funding provides for NOAA's consultations on and implementation of Essential Fish Habitat at the enhanced level Congress provided in fiscal year 2019 and not the reduction proposed by the administration. 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 the impacts on these important fishery habitats.

Fisheries Management Programs and Services.—The Conservancy supports the appropriation of at least \$121.116 million, consistent with fiscal year 2019 funding. With a \$214 billion dollar fisheries and seafood sector, fishermen 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, and support for these efforts is necessary to recover fish stocks so that they provide food and jobs now and in the future. It is critical that funding be provided to reduce destructive fishing practices, restore coastal habitats, and support the efforts of fishermen and fishing communities and do so in a collaborative way. Funding for work already begun to improve the management of electronic monitoring and reporting must be maintained. Recent legislation and administrative action to combat illegal, unreported, and unregulated (IUU) fisheries show great promise in leveling the playing field for legal fishermen. Funding provided will enable NOAA to take the next steps on traceability of seafood.

Fisheries Data Collections, Surveys and Assessments.—The Conservancy supports at least \$168.086 million, consistent with fiscal year 2019 funding. Limited or poor-quality information on the status of fishery stocks undermines the effectiveness of fishery 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 funding proposed will help the agency prioritize assessments, determine what level of assessments are needed and where to appropriately incorporate ecosystem linkages—such as ocean conditions, habitat, multispecies assemblages, and socioeconomic factors. The Conservancy does not support the Administration's proposed reduction for cooperative research efforts with fishermen to directly engage them in the collection of data that drives management.

Pacific Coastal Salmon Recovery Fund (PCSRF).—The Conservancy supports at least \$70 million, an increase of \$5 million from fiscal year 2019 funding and the level provided in the Senate's fiscal year 2019 reported bill. This funding level is also supported by five western Governors who recently sent a letter to Congress justifying this request. PCSRF is the most critical Federal program addressing major threats to Pacific salmon so that these fish can continue to sustain culture, economies, recreation, and ecosystem health. PCSRF funding is tailored for each State, competitively awarded based on merit, and has funded hundreds of successful, on-

¹Samonte et al. 2017. Socioeconomic Benefits of Habitat Restoration. NOAA Tech. Memo. NMFS-OHC-1. <http://www.habitat.noaa.gov/pdf/TM-OHC-1.pdf>.

the-ground salmon conservation efforts. PCSRF invests in cooperative efforts to conserve species under NOAA's jurisdiction, and projects are matched at a 3:1 ratio (Federal: non-Federal). The 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 at least \$196.848 million, consistent with fiscal year 2019 funding. Competitive grants to States and Tribes support conservation actions that contribute to recovery or have direct conservation benefits for listed species, recently de-listed species, and candidate species that reside within the States. Maintaining level funding for Species Recovery Grants would allow the agency to strengthen and expand partnerships to address the growing number of listed species and allow for larger, ecosystem-level scale recovery efforts. The Conservancy works with State agency partners to restore endangered species and monitor the results of these efforts. Additional listed species and emerging challenges to recovery 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. NOAA's cooperative efforts with States, Tribes, and other partners such as the Conservancy, help to improve our understanding of and ability to protect listed salmon and the habitats that sustain them. Maintaining the Pacific and Atlantic salmon base funding, instead of implementing the administration's proposed reduction, will allow NOAA to enhance recovery efforts including monitoring, fish passages, hatchery operations, and stakeholder engagement.

NATIONAL OCEAN SERVICE

Coastal Zone Management and Services.—The Conservancy supports at least \$48.039 million, consistent with the administration's fiscal year 2020 request. This is an increase to the amount provided by Congress in fiscal year 2019 to fund the regional data portals and an adjustment to base. These data portals make accessible a wide array of Federal ocean data critical to ocean users and conservation efforts. NOAA's research and monitoring of coastal and marine systems provide data and decision-support tools that inform the safe operations of industry, prioritize habitats for restoration, and advance science-based management decisions. Improving our ability to incorporate natural infrastructure into coastal protection efforts before and after storms can help communities achieve multiple benefits such as improving fisheries productivity and coastal water quality. Additionally, the Conservancy has worked with NOAA through the Digital Coast partnership to develop decision support tools and techniques that help communities understand and reduce risk and build resilience. Sharing this work across Federal, State, and Tribal agencies, industry, and with non-governmental organizations can increase our collective ability to understand and incorporate complex coastal economic, social, and ecological needs into decisionmaking.

Coastal Management Grants.—The Conservancy supports at least \$75.5 million for Coastal Zone Management Grants, consistent with fiscal year 2019 funding. Our Nation's coastal areas are vital to our economy and our way of life. The narrow area along our coasts is home to approximately 163 million people and coastal economies contribute over 45 percent of our gross domestic product. The Conservancy collaborates with State coastal programs around the country to meet multiple goals for coastal communities including economic development, enhancement of public access and recreation, and conservation of coastal resources. To advance these goals, the Conservancy supports at least an additional \$30 million in Title IX funds for the competitively National Coastal Resilience Fund, consistent with the fiscal year 2019 level. The National Coastal Resilience Fund has provided 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 that they are ready to match and leverage this funding to take proactive measures to protect their way of life.

Coral Reef Conservation Program.—The Conservancy supports at least \$27.6 million, consistent with fiscal year 2019 funding. The administration's proposed reduction to the program is unwarranted given that the decline of coral reefs continues to have significant social, economic, and ecological impacts on people and communities in the United States and around the world. The Conservancy works with NOAA's Coral Reef Conservation Program under a competitively awarded, multi-year cooperative agreement to address the top threats to coral reef ecosystems: changing ocean conditions, overfishing, and land-based sources of pollution. To-

gether, we develop place-based strategies, measure the effectiveness of management efforts, and build capacity among reef managers globally.

National Estuarine Research Reserve System.—The Conservancy supports at least \$27 million, consistent with fiscal year 2019 funding and opposes the administration’s proposed elimination of the program. The National Estuarine Research Reserve System (NERRS) partners with States and territories to ensure long-term education, stewardship, and research on estuarine habitats. Atlantic, Gulf, Pacific, Caribbean and Great Lakes reserves advance knowledge and stewardship of estuaries and serve as a scientific foundation for coastal management decisions. By using local management needs to help shape research, the NERRS aim to fill critical gaps. Incorporating the results of this research into training programs and through public engagement, the NERRS make science actionable for communities.

Sanctuaries and Marine Protected Areas.—The Conservancy supports at least \$55.5 million, consistent with fiscal year 2019 funding. 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 over 42 million visitors each year. Through a transparent, inclusive approach, the marine sanctuaries provide for the conservation of our natural and cultural marine resources while balancing multiple uses and diverse stakeholder needs.

Thank you for this opportunity to share The Nature Conservancy’s priorities. Please contact me if you have questions or would like additional information.

[This statement was submitted by Sarah Murdock, Director of Resilience and Water Policy.]

PREPARED STATEMENT OF THE NEZ PERCE TRIBE

The Nez Perce Tribe (Tribe) appreciates the opportunity to provide written testimony to the Committee as it evaluates and prioritizes fiscal year 2020 appropriations for the Department of Commerce and the Department of Justice. This testimony addresses spending allocations for the Pacific Coastal Salmon Recovery Fund and Salmon Management Activities within the National Oceanic and Atmospheric Administration (NOAA), and funding or set-asides for the grants provided to Tribes within the Department of Justice (DOJ).

As detailed below, for fiscal year 2020, the Tribe recommends both preservation of the Pacific Coastal Salmon Recovery Fund—which has again been proposed to be eliminated—and funding for the Pacific Salmon Recovery Fund at \$70 million but no less than \$65 million; funding for Salmon Management Activities at \$122.5 million; full funding for programs authorized under the Tribal Law and Order Act; continuation of the \$37.5 million for assistance to Indian tribes enacted in fiscal year 2019 through the Office of Justice Programs (OJP), with flexibility in program funding, or in the alternative the 7 percent tribal set-aside proposed by the Administration in the fiscal year 2020 budget request; maintaining the tribal set-aside of 5 percent out of Crime Victims Fund distributions; and keeping tribal funding under the Community Oriented Policing Services program at \$30 million or greater.

The Nez Perce Tribe is a federally-recognized Indian Tribe with treaty-reserved fishing, hunting, gathering, and pasturing rights in the Snake River Basin and Columbia River Basin. In its 1855 Treaty, the Tribe reserved, and the United States secured, “the right of taking fish at all usual and accustomed places in common with the citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”¹

It is the Tribe’s desire that all species and populations of anadromous and resident fish and their habitats be healthy and harvestable throughout the Tribe’s usual and accustomed fishing places. The Tribe has long had an interest, and played an active role, in restoring anadromous and resident fish runs—including fall and spring Chinook, steelhead, sockeye, lamprey, bull trout, and white sturgeon—throughout all of the areas where the Tribe reserved treaty fishing rights. The Tribe is involved in these efforts to protect implementation of treaty rights, to restore species and conditions consistent with the Treaty, and to protect the long-term productivity of their natural resources.

¹Treaty with the Nez Percés, June 11, 1855, 12 Stat. 957. The Treaty with the Nez Percés, June 9, 1863, 14 Stat 647, preserved the off-reservation rights that the Tribe reserved in its 1855 Treaty.

The Tribe's Department of Fisheries Resources Management (DFRM) is one of the largest and most successful tribal fisheries programs in the United States,² with offices located at Lapwai, Sweetwater, Orofino, McCall, Powell, and Grangeville, Idaho, as well as Joseph, Oregon. The DFRM has an annual operating budget of over \$22 million and employs 190 tribal and non-tribal employees, 150 of whom are full-time.

The DFRM manages its own salmon fish hatchery at Cherrylane, Idaho, as well as 10 acclimation sites in Idaho and Oregon. In addition, the DFRM manages Kooskia National Fish Hatchery and co-manages Dworshak National Fish Hatchery. The DFRM also coordinates with the Idaho Department of Fish and Game and the U.S. Fish and Wildlife Service on production from other salmon and steelhead hatcheries throughout Idaho. The Tribe is committed to this work and requests that the United States properly fund the programs that are an instrumental part of the overall work on fish recovery.

PACIFIC COASTAL SALMON RECOVERY FUND

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established by Congress in fiscal year 2000 to protect, restore, and conserve Pacific salmonids and their habitats. The congressionally-authorized activities that were funded under the PCSRF program maintain populations necessary for exercise of tribal treaty fishing rights or native subsistence fishing. Over \$1.2 billion has been appropriated for PCSRF since 2000. With this funding, States and Tribes have leveraged additional resources to collectively implement 13,200 projects to conserve West Coast salmon.³ The Tribe requests PCSRF be funded at least at the fiscal year 2019 level of \$65 million for fiscal year 2020 but ideally requests it be funded at \$70 million to support on the ground restoration actions.

PCSRF has been used by the Tribe to restore coho (silver) salmon to the Tribe's reservation in the Clearwater River, a distance of 500 miles from the ocean. Coho were extirpated from the Clearwater River over 40 years ago and most of these fish returned only as far as the lower Columbia River. Through the PCSRF (and Mitchell Act funds) the Tribe is able to rear and release almost one million coho into the Clearwater River, restoring their presence in the Snake River Basin. The Tribe views these returns as a tremendous success with counts of coho numbering more than 18,000 in 2014.

In 2017, the Tribe worked with Oregon Department of Fish and Wildlife and the Confederated Tribes of the Umatilla Indian Reservation to also have the first release of coho in the Lostine River, a tributary of the Grande Ronde River. After decades of extirpation, these fish are being restored to some of the best habitat in the Columbia River Basin. Continued funding for the operation of these hatchery supplementation efforts is needed to maintain the populations of most species of salmon and steelhead in this "breadbasket" of salmon habitat, located upstream of eight Columbia River dams.

SALMON MANAGEMENT ACTIVITIES

The Mitchell Act provides for the conservation of the fishery resources of the Columbia River and is administered by NOAA's National Marine Fisheries Service. Funding for the Mitchell Act component of NOAA Fisheries supports the operations and maintenance of Columbia River hatcheries through grants and contracts to the States of Washington, Oregon, and Idaho, and to the U.S. Fish and Wildlife Service, to mitigate the loss of salmon on the Columbia and Snake Rivers. The level for Salmon Management Activities in the final fiscal year 2019 Consolidated Appropriations Act was \$37 million, an increase over the \$35.5 million enacted in both fiscal year 2017 and fiscal year 2018. Of the total \$37 million, up to \$1.5 million in fiscal year 2019 funding is to implement the newly-renewed Pacific Salmon Treaty Agreement. The Tribe would respectfully request that \$122.5 million be appropriated in fiscal year 2020 for Salmon Management Activities. This significant increase is directly tied with implementation needs of the Pacific Salmon Treaty. Of this amount, it is recommended that \$26.6 million be allocated for Mitchell Act Programs to implement reforms called for in the "Conservation of Columbia Basin Fish" and the Federal Columbia River Power System Biological Opinion, of which \$6.7 million (or 25 percent of enacted) is directed to the Tribes to enhance natural stock recovery programs. The remaining \$95.9 million would be allocated for the Pacific Salmon

²The Nez Perce Tribe's DFRM received the 2015 Honoring Nations award with High Honors from The Harvard Project on American Indian Economic Development.

³National Oceanic and Atmospheric Administration Budget Estimates fiscal year 2019, page NMFS-65

Treaty-of which \$42.3 million is annual operations for the implementation the 2019–2028 Agreement, and \$53.6 million is one-time funding for specific projects to support the implementation of the 2019–2028 Agreement.

The importance of this funding cannot be overstated as the comprehensive, geographic nature of its application in the Pacific Northwest provides for an integrated infrastructure for fish management. In addition, these funds allow for fish to be grown at other facilities that are used at Nez Perce Tribal production facilities. Other regional agencies also use the funds to grow fish that enhance treaty fishing opportunities for Nez Perce Tribal members on the Columbia River.

DEPARTMENT OF JUSTICE TRIBAL ASSISTANCE GRANT FUNDING

Providing law and order is one of the fundamental requirements of any functioning government. However, Tribes are limited in the resources available to commit to these programs as the United States has historically underfunded such programs in Indian Country. Tribes rely on the grant programs with the Department of Justice to help grow the capacity of tribal law and order systems.

In order to provide law enforcement, victims services, and tribal justice to Indian and non-Indian residents on the reservation, the Tribe has relied on programs such as the Coordinated Tribal Assistance Solicitation grants program, the Tribal Juvenile Healing to Wellness Court program, the Comprehensive Tribal Victim Assistance Program, the Tribal Justice Systems Infrastructure Program, Violence Against Women Act programs, the Justice Systems and Alcohol and Substance Abuse Program, and the Children’s Justice Act Partnership program. These programs need to continue to be funded.

As stated above, the Tribe recommends full funding for programs authorized under the Tribal Law and Order Act. The Tribe also recommends either continuation of the \$37.5 million for “assistance to Indian Tribes” enacted in fiscal year 2019 under the State and Local Law Enforcement Assistance account in the Office of Justice Programs grants, or the President’s requested 7 percent tribal set-aside of OJP funds. There needs to be flexibility provided in program funding so that the funding is not narrowly allocated to Tribes solely through competitive grant programs.

The Tribe strongly supports the 5 percent from the Crime Victims Fund for grants to Indian Tribes to improve services for victims of crime as provided in section 510 of the final Consolidated Appropriations Act. This tribal set-aside will provide some \$168 million to the Office for Victims of Crime for Tribes.

Finally, the Tribe urges this subcommittee to fund the Tribal Resources Grant Program under Community Oriented Policing Services programs at \$30 million, an increase of \$3 million over fiscal year 2019, and to maintain a level of \$3 million for the Tribal Access Program.

PREPARED STATEMENT OF THE NORTHWEST INDIAN FISHERIES COMMISSION

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

Chairman Moran, Ranking Member Shaheen, 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 comprised 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, we provide 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 2020 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.

SUMMARY OF FISCAL YEAR 2020 APPROPRIATIONS REQUESTS

- \$70.0 million for NOAA Pacific Coastal Salmon Recovery Fund
- \$42.3 million for NOAA Pacific Salmon Treaty operational costs, plus \$57.1 million in one-time implementation costs
- \$25.9 million for NOAA Mitchell Act Hatchery Programs
- \$20.0 million for NOAA Fisheries Disaster Assistance Program
- \$5.0 million for NOAA Hatchery Genetic Management Plans

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, and have always been, the foundation of Tribal cultures, traditions and economies in western Washington. To ensure that Tribal treaty rights and lifeways are protected and not rendered meaningless, 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 \$70.0 million for NOAA Pacific Coastal Salmon Recovery Fund (PCSRF)

We respectfully request \$70.0 million for PCSRF, an increase of \$5.0 million over the fiscal year 2019 enacted level. It is worth noting that this request 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, but we recognize that budget conditions may necessitate an incremental increase in the short term. Nevertheless, we continue to support the original congressional intent of these funds that would enable the Federal Government to fulfill its 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 salmon 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 over 1.1 million acres of spawning and rearing habitat restored and protected, and re-establishing salmon access to 11,980 miles of previously inaccessible streams in our region.

—Provide \$42.3 million for operational costs, plus \$57.1 million in one-time implementation costs for national commitments in the newly renegotiated Pacific Salmon Treaty agreement (within Salmon Management Activities and Regional Councils and Fisheries Commissions)

We support the Pacific Salmon Commission (PSC) U.S. Section's request of \$42.3 million for operational costs, plus \$57.1 million in one-time implementation costs for the national commitments in the newly renegotiated Pacific Salmon Treaty (PST) agreement. The PST is renegotiated every decade between the United States and Canada. The new international agreement brings additional Federal obligations to ensure compliance with the treaty. The cost of the commitments created by the treaty are substantially greater than the funding provided in the NMFS budget in past years.

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. After many years of negotiations, in 1985 the U.S. and Canada agreed to cooperate on the management, research and enhancement of Pacific salmon stocks of mutual concern by developing and ratifying the PST. The PSC was created to implement the PST and is responsible for developing management recommendations and assessing each country's compliance with the treaty.

Within our collective request to support the PSC and implement the PST, we specifically request the following funding within the Salmon Management Activities account. Of the \$57.1 million in one-time implementation funding, \$53.6 million is requested from the Department of Commerce. This includes \$31.2 million for Puget Sound critical stock habitat restoration (identified in the draft biological opinion associated with implementation of the PST) to provide critical risk reduction measures for several Chinook salmon runs. Also, \$8.7 million is requested to produce sound science used for Chinook salmon management, which includes \$2.5 million for the Coded Wire Tag (CWT) Program and \$3.5 million to improve catch and escapement estimates. Finally, \$5.39 million is requested for the Puget Sound Critical Stock Augmentation Program and \$5.6 million is requested to increase prey availability for ESA-listed killer whale.

The Puget Sound Critical Stock Augmentation Program is required for effective implementation of the PST. This program provides funding for operation and maintenance costs for hatchery augmentation programs. These hatchery efforts were initiated in connection with the 2008 agreements and will be enhanced through the new agreement, because the conservation needs of these populations could not be met by harvest restrictions alone.

The funding and implementation of the CWT Program is also a U.S. obligation under the PST. The CWT Program produces data that is widely used by State, Federal and Tribal fisheries managers to evaluate hatchery contributions to catch, smolt to adult survival rates, spawner abundance on spawning grounds, differential in-hatchery treatments, and other important information that supports fisheries management and research. Funding for the coast-wide CWT Program supports implementation, maintenance and efficiency improvements.

—Provide \$25.9 million for NOAA Mitchell Act Hatchery Programs (within Salmon Management Activities)

We respectfully request \$25.9 million for the Mitchell Act Hatchery Programs. The fiscal year 2018 appropriations provided a total of \$20.2 million. The request for an additional \$5.7 million in Mitchell Act funds above the fiscal year 2018 funding level is to ensure that mitigation hatcheries operate at full production level to meet Federal obligations. This program is funded through the Salmon Management Activities account.

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 between 50 and 60 million juvenile salmon and steelhead in Oregon and Washington. These programs provide fish production for Tribal treaty and non-Tribal commercial and recreational fisheries in the Columbia River, and also contribute to ocean fisheries from Northern California to Southeast Alaska. Unfortunately, overall production from these hatcheries has been reduced from more than 110 million to fewer than 60 million fish due to inadequate funding.

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 fisheries under the terms of the PST.

—Provide \$20.0 million for NOAA Fisheries Disaster Assistance Program

We respectfully request \$20.0 million for the Fishery Disaster Assistance Program, an increase of \$5.0 million above the fiscal year 2019 enacted level. Numerous salmon fisheries disasters have adversely impacted Washington Tribes and the financial impact from these disasters is severe.

Unforeseen natural and manmade disasters can have grave and unexpected impacts on Tribal treaty fishing and the livelihoods of Tribal members who are economically dependent upon these fisheries. Because of the seasonal nature of fishing, a single disaster can have significant impacts on annual revenues needed to maintain boats and gear, forcing fishers to drop out of the sector, and therefore sometimes lead to diminished fishing fleets. An ongoing Fisheries Disaster Assistance Program is a much-needed stop gap measure to prevent the collapse of this important economic sector during difficult times. We therefore, respectfully request ongoing appropriations to maintain and enhance the Fisheries Disaster Assistance Program, which is needed to support a resilient national fishing fleet.

—Provide \$5.0 million for NOAA Hatchery Genetic Management Plans (within Pacific Salmon)

We respectfully request \$5.0 million to provide increased funding to expedite NMFS's review and approval of the backlog of western Washington Hatchery Genetic Management Plans (HGMPs) and implement those plans that are now complete. Review and approval of HGMPs is necessary to provide hatcheries with ESA coverage. The fiscal year 2019 appropriations provided \$65.0 million for the Pacific Salmon account, which funds HGMP review. However, the fiscal year 2019 report language was silent regarding funding for NMFS' expedited review of HGMPs. NMFS' fiscal year 2020 proposed budget requests a decrease of \$2.0 million for HGMP review, despite reported progress with new funding, still facing a backlog of plans and rising HGMP implementation needs.

NMFS uses the information provided by HGMPs to evaluate a hatchery's impacts on salmon and steelhead listed under the ESA. 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.

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, Chair.]

PREPARED STATEMENT OF THE OCEAN CONSERVANCY NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Thank you for this opportunity to provide Ocean Conservancy's recommendations for fiscal year 2020 funding for NOAA. Ocean Conservancy has worked for over 40 years to address threats to the ocean through science-based, practical policies that protect our ocean and improve our lives. To learn more about Ocean Conservancy's support for a strong ocean budget at NOAA, see www.TheMoreYouNOAA.org.

We greatly appreciate the subcommittee's efforts to ensure a positive outcome for NOAA in the fiscal year 2019 omnibus, which made important investments in NOAA ocean programs, including Integrated Ocean Acidification, Marine Debris and Regional Ocean Data and Partnerships.

We reject the Trump administration's proposed budget for NOAA in fiscal year 2020, which would cut nearly \$1 billion in funding and wholly eliminate vital ocean and coastal programs. As described in this testimony, we support funding for NOAA ocean programs at or above fiscal year 2019 funding levels to maintain current effort and provide targeted increases as appropriate.

NOAA's mission to understand, protect, restore, and manage our ocean, coasts, and Great Lakes is vitally important to sustain these resources and our economy. The U.S. ocean and coastal economy contributes \$352 billion annually to the Nation's GDP and supports 3 million jobs. There is a good reason that NOAA is in the Department of Commerce, and adequate funding is vital to support a healthy and resilient ocean that can maintain and grow our coastal economies and communities. For example, our Nation's fisheries and seafood sector generates \$212 billion in sales impacts to the U.S. economy and fishermen rely on information from NOAA to make the most informed decisions on where to fish, how to fish and when to fish. Coastal wetland buffer zones in the U.S. are estimated to provide economically important storm protection benefits, saving New Jersey \$625 million in direct property damage during Superstorm Sandy. NOAA works to build resilient coasts that are more storm-ready and prepared for threats like sea level rise and ocean acidification.

Much of the U.S. ocean is under Federal jurisdiction, and yet many of NOAA's most successful programs focus on pushing resources and decisionmaking power out to regions, States and frontline communities. NOAA is providing leverage for hard-working people on the coast and on the water who are fighting for a stronger economy and a healthier ocean, through region-by-region fishery management, region-specific program, extramural funding that supports State agencies and universities, place-based conservation in our estuaries and oceans and more.

As you craft the fiscal year 20 spending bills, we ask that you also 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 coral reefs and marine mammals. We need both. NOAA's ocean programs support many other Federal agencies and missions that will also

suffer if NOAA funding is cut. For example, ocean observations and monitoring provide critical information for 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 continue to raise the alarm about this administration’s proposals to wholly eliminate vital NOAA programs like Coastal Zone Management Grants, Sea Grant, National Centers for Coastal and Ocean Science, and the National Estuarine Research Reserve System, among others. We also offer additional testimony and recommend funding increases for the following NOAA programs.

Account, Program or Activity	Fiscal Year 2019 Enacted	Fiscal Year 2020 Recommendation
Operations Research and Facilities		
National Ocean Service		
Coastal Science, Assessment, Response and Restoration: Marine Debris.	\$7.5 m	\$10 m
Coastal Zone Management Grants	\$75.5 m	Fiscal year 19 or above
Coastal Zone Management and Services—Regional Ocean Data Portals.	\$1.5 m (IOOS)	\$10 m
National Marine Fisheries Service		
Marine Mammals, Sea Turtles, & Other Species	\$118.348 m	Fiscal year 19 or above
Fisheries Data Collections, Surveys and Assessments	\$168.086 m	Fiscal year 19 or above
Regional Councils and Fisheries Commissions—PFMC	\$250,000
Climate and Communities Initiatives.		
Office of Oceanic and Atmospheric Research		
Integrated Ocean Acidification	\$12 m	\$21.775 m
Office of Marine and Aviation Operations		
Marine Operations & Maintenance	\$190.670 m	Fiscal year 19 or above

Marine Debris—\$10 million

Marine debris, particularly plastic waste pollution, is one of the most widespread 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. With oil prices at an all-time low, coupled with growing population levels and economic prosperity, plastic production and consumption are predicted to double over the coming decade. 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 causes impacts on wildlife through entanglement, ingestion and ghost fishing and also impacts marine transportation causing navigational hazards and vessel damage.

Last year, Congress reauthorized the program via the Save Our Seas Act of 2018. The SOS Act enjoyed broad bipartisan support in both chambers, and the President signed it into law in an Oval Office ceremony. While reauthorized at the traditional level of \$10 million, the program received only \$7.5 million in fiscal year 2019. Given the magnitude of the problem, there is an urgent need for the NOAA Marine Debris Program to do more to counter the growing threat to ocean health. Fundamental knowledge gaps exist in four critical areas: the sources of plastic waste in the ocean, how the waste distributes within the marine environment, the fates of those materials, as well as their impacts. More scientific research into these key areas will support data-driven policy solutions to prevent plastic from entering the environment and impacting ocean health. Additional funding will enable NOAA MDP to support this additional research.

Coastal Zone Management Grants

These grants achieve multiple goals for coastal communities including economic development, enhancement of public access and recreation, and protection of coastal resources. The CZM program provides Federal support for these State programs to ensure that as a nation, all coastal States and territories can enable their coastal communities to achieve both State and national priorities. This State-Federal partnership also enables States to leverage Federal funds to improve permitting processes, provide grants to communities, and ensure Federal actions are consistent with State laws. Moreover, the CZMA requires a dollar-for-dollar State match for almost all Federal funding, with States matching over \$59 million fiscal year 2016.

Regional Ocean Data Portals/Regional Ocean Partnerships—\$10 Million

Regional Ocean Partnerships are regional organizations voluntarily convened by the governors to address ocean and coastal issues of common concern in the region.

Regional Ocean Partnerships 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. Some regions have advanced State and regionally identified management challenges by sharing and integrating Federal and non-Federal data to support regional coastal, ocean, and Great Lakes priorities through Regional Ocean Data Portals. Regional Ocean Data Portals are publicly available online tools created and maintained by Regional Ocean Partnerships to disseminate maps, data, and information with the purpose to inform decisions and enhance entrepreneurial opportunity. Ocean Data Portals are created with engagement from marine industries, the ocean science and technology community, State, Tribal, and local governments, and other ocean stakeholders. We greatly appreciated the appropriation of \$1.5M for fiscal year 2019, and we believe increased Federal funding support is critical, largely because the funding is split among nine regions. Appropriating \$10 million would provide sufficient funds for all nine regions to support State and regionally identified ocean priorities.

Marine Mammals, Sea Turtles and Other Species

Because of the need to for capacity for Gulf of Mexico restoration and the increasing impacts of climate change and other stressors on sea turtles, we support continued funding at or above fiscal year 2019 funding levels, including for the John H. Prescott Marine Mammal Rescue Assistance Grant Program, which funds the first responders for sick or dying marine animals.

Fisheries Data Collections, Surveys and Assessments

We support funding for programs that implement the *Magnuson-Stevens Fishery Conservation and Management Act* (MSA). Since the MSA was enacted in 1976, NOAA has made great strides towards ending overfishing and continued investments in these programs and our fishing communities are needed. This budget line supports a host of activities critical to MSA implementation, including resources for fisheries managers to conduct stock assessments for priority fish stocks, collect catch data from commercial and recreational fisheries, implement the requirement for annual catch limits (ACLs), and ensure the successful recovery of overfished populations.

We support funding for electronic monitoring and reporting for nationwide efforts. In particular we support funding that goes to the Gulf of Mexico region, where managers need electronic monitoring to keep track of catch and prevent catch overages in the red snapper fishery. Given the unique management challenges that exist in the Gulf of Mexico, there is a significant need for additional funding.

Regional Councils and Fisheries Commissions

We support funding for the operations and initiatives of the Regional Fishery Management Councils. The Councils were established by the MSA to prepare management plans aimed at preventing and eliminating overfishing and rebuilding overfished stocks for the Nation's fisheries. As the Councils strive to understand the impacts of climate change on our oceans and fisheries, we are seeing growing needs from fishery managers, scientists, and industry to address impacts and understand their causes. We additionally support \$250,000 for the PFMCI to update and implement their ecosystem management plans and Climate and Communities Initiative to support climate-ready fisheries and ecosystem-based fisheries management.

Integrated Ocean Acidification—\$21.775 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. Under FOARAM, OAP is directed to "provide grants for critical research projects that explore the effects of ocean acidification on ecosystems and the socioeconomic impacts of increased ocean acidification," establish long-term monitoring, identify adaptation strategies, and conduct public outreach.

Ocean acidification (OA) is the rise in acidity of the earth's ocean caused by uptake of CO₂ 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, such as FOARAM, have greatly expanded our knowledge of OA 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 \$21.775 million for this program.

Marine Operations and Maintenance

Marine Operations and Maintenance should be funded at or above the fiscal year 2019 level. Days at sea funded by this line are functionally tied to fishery stock assessments, and the two programs must be viewed together.

[This statement was submitted by Jeff Watters, Director, Government Relations.]

PREPARED STATEMENT OF ORGANIZATIONS AND INSTITUTIONS IN SUPPORT OF THE
FULL RANGE OF EARTH SCIENCE RESEARCH, OBSERVATIONS, INFRASTRUCTURE, AND
EDUCATION PROGRAMS

NSF, NASA, AND NOAA

Thank you for the opportunity to present testimony from the organizations and institutions listed in support of strong and balanced funding for the full range of Earth science research, observations, infrastructure, and education programs under the jurisdiction of this subcommittee. This includes NSF's geoscience research, infrastructure, education and training activities, NASA's Earth science and education activities, and NOAA's research, observations, and education programs related to the oceans, atmosphere, weather, climate, surveying/navigation, and marine resources.

The ability to observe our planet—from the bottom of the ocean, to the surface, on land, and from space in a continuous and comprehensive fashion—and then to analyze the data and observations collected—is vital for the long term health and national, economic, and environmental well-being of our citizens and the world. The environmental information that comes from this ability is used in modeling, digital and on-line maps, daily weather forecasts, land-use planning, transportation efficiency, and agricultural productivity, making it central to our lives, and providing substantial contributions to our economy, national security, and public safety.

This knowledge and information we rely on for our daily lives are the result of a sustained commitment to both exploratory and applied Earth science, and to what has become a sophisticated national and international infrastructure of observing systems, scientific research, and applications. A particular strength of the Earth science and applications field is the extent to which curiosity-based science is inextricably integrated with mission-driven and applications-oriented science and societal benefits. Ongoing commitment to this inspirational and practical science has returned benefits to society many times over, and will continue to do so with further support.

Among the most intellectually and important revelations from the past 60 years are those documenting the extent to which Earth is changing, in multiple ways and for many reasons. Daily changes, such as weather, were obvious to even the earliest humans, even if not explainable. Longer-term changes, particularly those occurring on global scales, are only now becoming understood and gaining public recognition. Some of these changes are climate related, such as the El Niño-Southern Oscillation (ENSO), but many are not. In addition to climate, changes in air quality, water availability, agricultural soil nutrients, and other Earth resources are being driven largely by human actions. Successfully managing risks and identifying opportunities associated with these changes require a clear understanding of both the human-driven and the natural processes that underlie them.

A changing Earth is one we can never understand only from past experience. Its evolving and emerging characteristics must be continually explored through research, observation, data analysis, and modeling. Our scientific curiosity must seek and reveal the new and altered processes that will result from change, if we are to continue applying our knowledge effectively for society's benefit. Decisions we make this decade will be pivotal for predicting the potential for future changes and for influencing whether and how those changes occur. Embracing this need to understand a changing Earth, and building a program to address it, is a major challenge for the coming decade and beyond.

Meeting this and other challenges requires a sustained and impactful investment by this subcommittee in our Earth science and education enterprise via NSF, NASA, and NOAA.

The Earth Sciences and National Security.—In response to questions for the record from the Senate Armed Services Committee in 2017, former Secretary of Defense James Mattis said, “. . . climate change is a challenge that requires a broader, whole-of-government response. If confirmed, I will ensure that the Department of Defense plays its appropriate role within such a response by addressing national security aspects.” Changes in the climate pose direct threats, such as sea level rise and increased storm surges that inundate coastal military and civilian infrastructure. Dramatic changes in food, water, and energy availability also increase the like-

lihood of instability and state failure across the globe. The 2019 National Intelligence Strategy pointed out that climate change should be expected to contribute to straining the capacities of governments to deal with growing influxes of migrants and refugees, intense economic or other resource scarcity, or infectious disease outbreaks.

The Earth Sciences—Producing a Workforce for U.S. Industry.—The geosciences research that NSF, NASA, and NOAA fund helps educate and train the next generation of geoscientists. Using data provided by the Bureau of Labor Statistics, the American Geosciences Institute (AGI) calculated a total of 311,768 geoscience jobs in 2016, and this number is expected to increase by 11 percent by 2026 to a total of 344,704 jobs. Approximately 147,000 geoscientists are expected to retire by 2026, but over the next decade, only approximately 62,000 students will be graduating with their bachelor's, master's, or doctoral degrees in the geosciences. According to AGI's Status of the Geoscience Workforce 2018, given minimal non-retirement attrition from the geoscience workforce, there is expected to be a deficit of approximately 118,000 geoscientists by 2026.

Industry hiring of geoscience graduates fluctuates between sectors over time, with the oil and gas sector and the Federal Government each taking on roughly 30 percent of recent master's graduates who gained employment in the geosciences in 2017, and the environmental services sector hiring the largest share (31 percent) of recent bachelor's graduates who stayed in the geosciences, according to the AGI's *Status of The Geoscience Workforce 2018*. Other industries hiring geoscientists include mining, construction, agriculture, transportation, and information technology services, all of which contribute to our national infrastructure. NSF, NASA, and NOAA support for the geosciences contributes significantly to the education and training of these individuals via programs in research, graduate and undergraduate student support.

The Earth Sciences—Yielding Economic Benefits.—According to the administration's interagency Subcommittee on Ocean Science and Technology, optimizing sustainable use of our exclusive economic zone and the high seas is vital to America's global economic leadership. In 2015, the U.S. ocean economy, which includes six economic sectors dependent on the ocean, contributed more than \$320 billion to the U.S. Gross Domestic Product (GDP) and supported 3.2 million jobs directly dependent on these resources. These economic sectors include: living resources, marine construction, offshore mineral extraction, tourism and recreation, ship and boat building, and marine transportation. A total of 42 percent of the U.S. labor force is employed in coastal watersheds. In 2014, counties adjacent to the shore contributed 43 percent percent of the U.S. GDP; the offshore mineral industry contributed over 170,000 jobs in 2013 and \$122 billion, the majority of which was from the oil and gas sector; approximately 88,000 square miles of the Nation's coastal wetlands provide nursery areas for commercially harvested fishery species and places of refuge for migrating birds; in 2015, the commercial and recreational fishing industry supported 1.6 million jobs and contributed \$208 billion in sales to the U.S. economy; and ocean measurements, observations and forecasting generate about \$7 billion in revenues annually. The U.S. currently imports more than 90 percent of its seafood, leading to a \$14 billion seafood trade deficit. The World Bank projects a nearly 50 percent increase in worldwide fish consumption between 2006 and 2030. The Nation has an opportunity to meet this demand, ensure food security, create new industries, and provide jobs by maximizing sustainable wild and aquaculture harvest.

Much of the ocean is underexplored and offers great potential for advancing science, technology, and our growing economy. Our resources are central to the national economy and American quality of life, and thus the challenge is to find the right balance between our present use of ocean resources and a productive and healthy ocean for future generations. Characterizing the primary uses of the marine environment (including fisheries, aquaculture, transportation and shipping, energy, national security, land values, mineral extraction, recreation, and protected species habitats) and the goods and services, beneficiaries, and market and non-market values attributable to those uses, is key to understanding the ocean's potential. It will be through our continued investment in Earth sciences and education that we will continue to develop the knowledge, the technology, and the people that will lead to informed decisions and actions that will help maximize the economic potential of our oceans while doing so in a responsible and sustainable manner.

The Earth Sciences and Public Safety.—The benefit of the investment in public weather forecasts and warnings is substantial: the estimated annualized benefit is about \$31.5 billion, compared with the \$5.1 billion cost of generating the information. In 2018 natural disasters cost the country \$91 billion and came from 14 different natural disasters ranging from hurricanes to wildfires to winter storms. We continue to experience extreme weather events in nearly every region of the country:

tornadoes in Oklahoma and Alabama, floods in Nebraska and Louisiana, and droughts in Texas. According to the National Academy of Sciences' report, *When Weather Matters*, the annual impacts of adverse weather on the national highway system and roads are staggering: 1.5 million weather-related crashes with 7,400 deaths, more than 700,000 injuries, and \$42 billion in economic losses, moreover \$4.2 billion is lost each year because of weather-related air traffic delays. The death, destruction, and economic harm communities and businesses experience from these and other weather events could be further reduced with continued research and training in the geosciences.

Technologies and observing systems developed to examine the fundamental Earth structure have also provided data and enabled models necessary for forecasting and estimating the impact resulting from major earthquakes, tsunamis, volcanic eruptions, and landslides. Understanding of disaster events enables business and government to engage in informed risk management and mitigation and to develop response strategies. When an event does occur, early warnings for evacuation based on timely forecasts and characterization of these disasters has the potential to save billions of dollars and countless lives.

Concluding Thoughts.—We appreciate the difficult decisions Congress must make within the constraints of the budget environment. We believe that the future of this Nation is well served by a strong and sustained investment in the full scope of our research enterprise—particularly the Earth sciences and education programs sponsored by NSF, NASA, and NOAA. This subcommittee has consistently been a strong champion for the Nation's research enterprise and we hope you will be able to maintain that high priority as you develop the fiscal year 2020 appropriations bill in the coming weeks. Thank you for the opportunity to submit this statement.

SUPPORTING ORGANIZATIONS AND INSTITUTIONS

National Association of Marine Laboratories	Grice Marine Laboratory, College of Charleston
Lamont-Doherty Earth Observatory, Columbia University	Institute for Global Environmental Strategies
Scripps Institution of Oceanography Consortium for Ocean Leadership	University of New Hampshire School of Ocean and Earth Science and Technology, University of Hawaii at Manoa
Incorporated Research Institutions for Seismology	University of California, Los Angeles
University Corporation for Atmospheric Research	Severn Marine Technologies, LLC
Vaisala, Inc.	Hatfield Marine Science Center, Oregon State University
The Weather Company, an IBM Business	Hawai'i Institute of Marine Biology
Quantum Spatial, Inc.	Jacobsen Pilot Service, Inc.
National Estuarine Research Reserve Association	Geodynamics, LLC
Association of Public and Land-grant Universities	Ocean Aero, Inc.
University of Pittsburgh	American Metrological Association
The Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina	University of Washington
Earth2Ocean, Inc.	Penn State University
Florida Atlantic University, Harbor Branch Oceanographic Institute	University of Massachusetts Dartmouth School for Marine Science and Technology
Woods Hole Oceanographic Institution	University of California
Soil Science Society of America	Annis Water Resources Institute—Grand Valley State University
UNAVCO	Michigan State University
Department of Ocean, Earth & Atmospheric Sciences, Old Dominion University	University of Iowa
Sitka Sound Science Center	Florida Atlantic University—Geosciences Department
Metropolitan State University of Denver	George Mason University
University of Oregon	Council on Undergraduate Research
Oregon Institute of Marine Biology	IOOS Association
Florida State University	Bermuda Institute of Ocean Sciences
Bigelow Laboratory for Ocean Sciences	Boston University
The University of Texas at Austin	GeoOptics
Research!America	North Carolina Agricultural and Technical State University
Moss Landing Marine Laboratories	Dauphin Island Sea Lab
	University of Wisconsin-Milwaukee, School of Freshwater Sciences

University of Wisconsin-Madison	Great Lakes Boating Federation
East Carolina University, Integrated Coastal Programs & Coastal Studies Institute	American Geophysical Union
Louisiana State University	Skidaway Institute of Oceanography, University of Georgia
Virginia Institute of Marine Science	Ocean Conservancy
California State University Council on Ocean Affairs, Science & Technology	Indian Brook Trout Farm Inc
The University of North Carolina at Wilmington	AccuWeather, Inc.
College of Earth, Ocean & Atmospheric Science	Hubbs-SeaWorld Research Institute
Oregon State University	Ocean Motion Technologies, Inc.
Southeastern Universities Research Association	American Geosciences Institute
Michigan Technological University	University of Colorado Boulder
Stony Brook University	University of Wisconsin System
University of Connecticut	Friday Harbor, University of Washington
Upton Environmental Inc. DBA Roffer's Ocean Fishing Forecasting Service	Colorado School of Mines
The University of Guam Marine Laboratory	Northern Illinois University
	Cleantech San Diego
	Riskpulse
	Turner Designs, Inc.
	Assure Controls, Inc.
	UC Davis Coastal and Marine Sciences Institute/Bodega Marine Laboratory

PREPARED STATEMENT OF ORGANIZATIONS IN SUPPORT OF THE STOP SCHOOL VIOLENCE ACT PROGRAMS

U.S. DEPARTMENT OF JUSTICE—STOP SCHOOL VIOLENCE ACT PROGRAMS

Dear Chairman Moran and Ranking Member Shaheen:

As you consider fiscal year 2020 appropriations for the U.S. Department of Justice (DOJ), we urge you to provide, at a minimum, the fully authorized amounts for each of the DOJ school safety grant programs under the STOP School Violence Act (Division S, Title V of Public Law 115–141).

While Congress provided a total of \$100 million authorized for these programs in for fiscal year 19, the School Violence Prevention Program (SVPP) administered by the Office of Community Oriented Policing Services (COPS) received a \$25 million appropriation, short of the fully authorized amount. Meanwhile the statute (34 U.S.C. § 10555) is clear that within the \$100 million authorized for each fiscal year from fiscal year 2019–2028, \$33 million of this amount is to be made available for the COPS program, and \$67 million is to be made available for the program administered by the Bureau of Justice Assistance (BJA).

Fully funding SVPP is critical to providing the most flexibility to school districts to meet their safety and security needs, which can vary widely. A district may have greater unmet needs for the type of assistance provided under the BJA program (violence prevention and mental health training, threat assessment and anonymous reporting programs) or SVPP (facility access control measures, emergency communications, law enforcement notification systems, and other protective measures), depending on the district.

Both grant initiatives support important elements of a balanced and holistic approach to school safety and security, and each program covers a different set of needs. For fiscal year 2018, the SVPP program was only able to make grant awards supporting less than half of more than 200 eligible applications, indicating the need for additional resources to address legitimate requirements. Providing additional funding for both programs in fiscal year 2020 would support districts throughout the country as they seek to assess policies, procedures and infrastructure in place and address local needs identified.

Representing stakeholders across the education and solutions provider communities, we strongly urge you to (1) provide a total of \$125 million for STOP School Violence Act programs, a \$25 million increase over fiscal year 2019, and (2) ensure each program, including SVPP, is provided with at least the full amount authorized and in the ratio stipulated in the statute, as you consider fiscal year 2020 appropriations for DOJ.

Thank you for your consideration.

ORGANIZATIONS

21st Century School Fund (21CSF)	National Systems Contractors
Door Safety and Security Foundation (DSSF)	Association (NSCA)
DHI Door Security + Safety Professionals (DHI)	National School Boards Association (NSBA)
National Council on School Facilities (NCSF)	Secure Schools Alliance (SSA)
	Security Industry Association (SIA)
	Secure Our Schools (SOS) Parkland

[This statement was submitted by Jake Parker, SIA.]

PREPARED STATEMENT OF THE PHYSICAL SCIENCE EDUCATION POLICY COALITION

PHYSICAL SCIENCE EDUCATION

Dear Chairman Moran, Ranking Member Shaheen, and Members of the subcommittee:

The Physical Science Education Policy Coalition (PSEPC) is a diverse group of scientific non-profit organizations that works to promote issues regarding all aspects of physical science education to benefit both students and teachers.

- We urge you to once again to reject the White House’s proposal to eliminate NASA’s Office of STEM Engagement and fund the office consistent with the fiscal year 2019 enacted level of \$110 million.
- We urge you to support the National Science Foundation (NSF) Education & Human Resources (EHR).
- We also urge you to reject the White House’s proposal to eliminate NOAA’s Office of Education and fund the office at the fiscal year 2019 enacted level of \$29 million.

NASA, OFFICE OF STEM ENGAGEMENT

NASA has an enormous reach in inspiring future scientists and engineers that keep the Nation at the forefront of research and exploration. NASA plays a pivotal role in inspiring and encouraging young people to pursue STEM disciplines of study and careers; engaging the broader public in NASA’s mission; and strengthening NASA and the Nation’s workforce. Bolstering American science and innovation is central to the administration’s strategy for strengthening the economy and increasing opportunities for Americans. The NASA Office of STEM Engagement supports programs such as the National Space Grant College and Fellowship Program (Space Grant) and the Experimental Program to Stimulate Competitive Research (EPSCoR).

The Space Grant program funds nearly 4,000 fellowships and scholarships for students in all 50 States and the District of Columbia who are pursuing a STEM career, allowing them to participate in NASA aeronautics and space projects integrating classroom learning with on-the-job training much like apprenticeships. The New Hampshire Space Grant Consortium is a Designated Consortium funded at a level of \$760,000 in fiscal year 2017. In New Hampshire, the Space Grant awarded 88 NASA Internships, Fellowships, and Scholarships (NIFS) to students at universities and colleges across the State. This program can have a profound impact on awardees, especially those from underrepresented groups. A testimonial from a female awardee says, “The New Hampshire Space Grant funded my participation in the NASA Academy at Marshall Space Flight Center. In this program, I was able to prototype a satellite, learn Creo CAD modeling, work on a ‘flat floor’ with air bearings, travel to NASA Kennedy for a launch, gain outdoors experience with weekend team building, travel to NASA JPL, SpaceX, Aerojet Rocketdyne, SkunkWorks, and Virgin Galactic for company tours, and build a network of aerospace students and professionals. I would argue that this experience was pivotal in securing my job and beginning my career after graduation. It was certainly pivotal in compelling me to follow my dreams of aerospace engineer . . . I am an aerospace engineer at Blue Origin.”

EPSCoR plays a key role in U.S. economic competitiveness by establishing partnerships with government, higher education and industry that are designed to effect lasting improvements in a State’s or region’s research infrastructure, R&D capacity and hence, its national R&D competitiveness. The goal of EPSCoR is to provide funding that will enable jurisdictions to develop an academic research enterprise directed toward long-term, self-sustaining, nationally-competitive capabilities in aerospace and aerospace-related research. The EPSCoR program is directed at those ju-

risdictions that have not in the past participated equitably in competitive aerospace and aerospace-related research activities.

EPSCoR States are home to 20 percent of the country's population and workforce. They contain nearly 30 percent of the Nation's research institutions and more than 15 percent of the Nation's scientific and technological personnel. They bestow 20 percent of the Nation's undergraduate degrees in science and engineering and 16 percent of the Nation's doctorate degrees in these fields of study. They are home to 20 percent of the country's high-tech industries. Fifty-seven of the Fortune 500 companies have their corporate headquarters in EPSCoR States.¹

Continued support for NASA's Office of STEM Engagement is vital to ensure the United States continues to train and inspire our next generation of scientists, engineers, and technicians in order to remain globally competitive.

NSF, EDUCATION & HUMAN RESOURCES (EHR)

Progress in STEM depends on educating discoverers—innovators and future leaders in the Nation's science and engineering enterprise. These discoverers are critical members of the STEM workforce. They fill vital roles throughout the public and private sectors, including academic, policy, research, and teaching positions. EHR programs educate, train, and support discoverers. These programs also engage citizen scientists and help foster a well-informed, STEM-literate citizenry prepared to handle rapid technological change and pursue STEM careers.

In addition to supporting programs aimed at preparing the next generation of STEM professionals, it also funds the discoveries—the foundational research and the design and implementation studies—that underpin these STEM human capital development initiatives. Just as NSF's Research and Related Activities (R&RA) directorates are dedicated to funding basic research that accelerates progress in science and engineering, EHR supports early-stage, exploratory research that enables improvements in STEM education, learning, and assessment. EHR programs fund crucial foundational, design and development, and implementation research that is made available to inform large investments at scale made by other agencies, organizations, and the private sector.

EHR currently funds \$5,026 million in active awards, many of which typically span multiple years. Kansas receives \$25 million in active awards to fund research at the State's major universities and colleges. For example, Dr. Melanie Derby, assistant professor of mechanical and nuclear engineering and the Hal and Mary Siegele professor of engineering at Kansas State University, will lead an interdisciplinary team that was recently awarded a 5-year, \$2.9 million NSF Research Traineeship Program (NRT) grant to train graduate students who can address complex challenges. The award was one of 17 NRT projects funded nationwide and is the first NRT awarded in the State of Kansas. This award to Kansas State University will prepare students to become science-based leaders and advocates for resilient rural communities by combining engineering, economics, and sociological knowledge to meet the needs of farmers, industry, and society. Students will engage with farmers, government and industry through interactive sessions and will develop relevant skills through innovative coursework and teamwork.

While PSEPC does not advocate for Directorate level funding levels at NSF, the goals of NSF EHR are in line with many of the core values of the organizations within PSEPC to promote an active, inclusive and diverse physical sciences community.

NOAA, OFFICE OF EDUCATION

The NOAA Office of Education advances education internally within the agency and to the broader public. The Office has several major areas of emphasis: the Educational Partnership Program (EPP) with Minority-Serving Institutions (MSI); the Ernest F. Hollings Undergraduate Scholarships; the Environmental Literacy Program; and the Bay Watershed Education and Training (B-WET). The Office of Education also coordinates interagency educational activities and those involving external partners.

The EPP/MSI workforce development program supports four NOAA-University education and collaborative research-based Cooperative Science Centers at Florida A&M University, Howard University, CUNY City College, and the University of Maryland Eastern Shore. These four universities partner with 24 additional universities to increase the number of students who graduate within degrees in STEM and natural resource management/policy. So far more than 1800 students have grad-

¹EPSCoR 2030 Report, http://www.epscoridaefoundation.org/media/docs/EPSCoR_2030_Report_4-23b.pdf

uated in NOAA-mission fields. Other key EPP/MSI initiatives are the Undergraduate Scholarship Program and NOAA Experiential Research & Training Opportunities.

The Hollings Scholarship Program provides students with 2 years of undergraduate academic assistance and a summer internship. There are more than 130 active scholars and a network of more than 1400 alumni, of which 75 percent have attended graduate school. Among other benefits, the program prepares students for careers in public service or as oceanic and atmospheric science teachers and educators who can improve U.S. science and environmental education.

The Environmental Literacy Program supports competitive grants and long-term external partnerships. The grants programs is most comprehensive and enduring national funding opportunity focused on improving environmental stewardship and increasing resilience to natural hazards.

B-WET provides competitive funding in support of K-12 Meaningful Watershed Educational Experiences, which promote classroom-based and outdoor education ecosystem learning and stewardship. B-WET currently operates in California, Hawaii, and the Chesapeake Bay, Great Lakes, Gulf of Mexico, New England, and Pacific Northwest regions.

In support of PSEPC goals, these NOAA Office of Education programs broaden STEM education and promote workforce development, with focus on underserved audiences.

ENDORSED BY THE FOLLOWING MEMBER ORGANIZATIONS

Acoustical Society of America (ASA)	American Institute of Physics (AIP)
American Association of Physics Teachers (AAPT)	American Physical Society (APS)
American Astronomical Society (AAS)	The Optical Society (OSA)

[This statement was facilitated by Dr. Bethany R. Johns at the American Institute of Physics.]

PREPARED STATEMENT OF THE REGIONAL INFORMATION SHARING SYSTEMS (RISS) PROGRAM

Law enforcement officers fight every day to keep our communities safe. Their jobs are challenging and dangerous. New threats emerge constantly, requiring officers to respond to diverse and complex situations. One organization—the Regional Information Sharing Systems (RISS) Program—is providing a solution by answering the demand for rapid, but secure, sharing of information and intelligence among law enforcement and public safety professionals, offering critical analytical and investigative support services, and providing lifesaving event deconfliction. It is respectfully requested that RISS be funded in fiscal year 2020 at \$48 million.

RISS reaches across the country (and to some international partners) and serves every level of government; local, State, regional, Federal, and Tribal criminal justice agencies benefit from RISS. More than 9,200 criminal justice agencies and other partners, as well as hundreds of thousands of law enforcement officers and criminal justice professionals, trust RISS and rely on it 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, assistance, and research.

RISS is composed of six regional centers and the RISS Technology Support Center (RTSC). The RISS Centers work regionally to respond to the unique crime problems of their regions, while working together on nationwide issues. The RTSC maintains the RISS Secure Cloud (RISSNET) and develops and implements RISSNET resources. The RTSC coordinates technical matters among the RISS Centers—including security and hardware and software upgrades—and communicates the direction of RISS information technology and database applications development.

WHAT RISS DOES

RISS integrates advanced technology and field-based solutions that connect systems and officers across jurisdictions.

RISSNET connects disparate systems, provides bidirectional sharing, offers a single simultaneous search of connected systems, houses hundreds of resources, and provides access to millions of records. Without RISSNET resources and information, multijurisdictional information sharing would become difficult, leads may be lost, and some cases may not be solved timely or at all.

RISS develops, maintains, and provides access to intelligence and investigative databases, including:

- The RISS Criminal Intelligence Database (RISSIntel)—provides for a real-time, online federated search of more than 50 RISS and partner intelligence databases.
- The RISS National Gang Program (RISSGang)—provides an intelligence database, a website, and information resources.
- The RISS Automated Trusted Information Exchange (ATIX)—a secure platform for law enforcement, public safety, first responders, and the private sector to share information.
- The RISSLeads Investigative Website—enables law enforcement officers to post information regarding cases or other law enforcement issues.
- The RISS Officer Safety Website—provides users with timely officer safety information and a secure infrastructure to exchange and share officer safety-related information.
- The RISS Property and Recovery Tracking System (RISSProp)—houses millions of pawn, secondhand, and other shop transactions to enable officers to identify and return stolen property and identify other related criminal activities.
- The RISS Master Telephone Index (MTI)—an analytical database designed to compare and match common telephone numbers in law enforcement investigations from across the Nation.
- The RISS Money Counter Project (MCP)—stores currency serial numbers for comparison to currency submitted by officers in previous cases.
- The RISS Drug Pricing Reference Guide—an online tool that enables officers to search for comparable prices on narcotics; serve as a price guide when assessing the value of seizures and contraband; and identify supply, demand, and popularity trends within the drug market.

RISS provides essential officer safety event deconfliction and related resources.

The RISS Officer Safety Event Deconfliction System (RISSafe) supports law enforcement personnel who are conducting an event near one another at the same time. Events include law enforcement actions, such as undercover operations, surveillance, or executing search warrants. 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, 1,913,653 operations have been entered into RISSafe, resulting in 459,799 identified conflicts. Without the identification of 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 and monitored on a 24/7/365 basis and 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. In May 2015, the three nationally recognized event deconfliction systems—Case Explorer, SAFETNet, and RISSafe—were integrated. The partners worked in collaboration to accomplish this goal with the help of many vested partners. This partnership and system integration have further strengthened officer and citizen safety across the country.

RISS provides investigative and analytical services, training and publications development, and comprehensive investigative research, including

- Equipment loans
- Audio/video enhancements
- Digital forensics
- Case support
- Field services
- Examples of training
 - Building Resilience Against Violent Extremism
 - Prescription Drug Crimes

- Examples of publications
 - Domestic Terrorism and Extremism*
 - Orlando Pulse Nightclub*
 - The Heroin Resurgence: A Painkiller Epidemic*

RISS supports Federal and nationwide initiatives that enhance and expand efficient and effective information sharing among the criminal justice community.

More than 1,000 Federal entities utilize RISS. RISS helps Federal programs meet information sharing mandates and serves as a bridge between local, State, regional, Federal, and Tribal law enforcement partners. Example partnerships include:

- Federal Bureau of Investigation's (FBI) Law Enforcement Enterprise Portal
- FBI's Law Enforcement National Data Exchange (N-DEX)
- High Intensity Drug Trafficking Areas
- National Fusion Center Association
- National Motor Vehicle Title Information System
- Nationwide Deconfliction Council/National Virtual Pointer System
- Nlets—The International Justice and Public Safety Network
- Office of the Director of National Intelligence, Federal, State, Local, Tribal—Information Sharing
- U.S. Attorneys' Offices
- U.S. Department of Homeland Security and the Homeland Security Information Network (HSIN)
- U.S. Department of Justice

RISS serves as an expert in intelligence and technology solutions, including federation and single sign-on (SSO).

RISS has streamlined processes, increased information sharing and officer access to critical data, enhanced the safety of officers and communities, and advanced important technology solutions. Examples of nationwide projects include:

- Expanded access to N-DEX
- Connected 19 fusion center intelligence systems to RISSIntel
- Deployed HSIN/RISS federated search
- Expanded law enforcement identity vetting and SSO capabilities
- Integrated a one-time passcode, online registration, and new user services

RISS'S IMPACT

RISS has been aggressively setting and achieving evidence-based goals since its inception. Below are some highlights of RISS's fiscal year 2018 results and productivity.

- Developed 188,310 analytical products.
- Loaned 2,527 pieces of specialized equipment.
- Responded to and provided research and information for 74,898 requests for assistance.
- Trained 43,145 law enforcement officers and personnel.
- Provided access to more than 49.7 million records to authorized personnel, including access to investigative databases, such as RISSProp, the MCP, and the MTI.
- Enabled users to conduct more than 5.1 million inquiries to RISS resources.

In addition, RISS services helped locate 1,175 individuals, resolve 1,325 cases, and prosecute 310 cases in fiscal year 2018. Law enforcement agencies reported that by using RISS services, their officers were able to arrest more than 36,780 offenders and seize more than \$629.6 million in narcotics, property, and currency over the last 10 years. RISS is an excellent return on investment for our nation. Hundreds of shared successes are submitted to RISS each year from agencies utilizing RISS services. Examples can be viewed at www.riss.net/Impact.

INVESTING IN RISS

RISS's proposed efforts for fiscal year 2020 will increase the number of RISS users and the number of database records available to users, as well as the number of inquiries to RISSNET resources. Funding for technology initiatives will improve speed, security, access, and authentication and enhance the entire user experience.

The fiscal year 2020 request for \$48 million will support the following:

- Operation of the six RISS Centers and all of their current support services and resources
- Operation of the RTSC (nationwide RISS data center)
- Support for the 24/7/365 nationwide RISSafe Watch Center

- Critical equipment and infrastructure
- RISSGang enhancements
- Trustmarks/federation expansion
- RISS ATIX enhancements
- Expansion of RISS's school safety response plans
- Combating opioids, heroin, and narcotics
- Expansion of RISSProp nationwide
- Officer safety/deconfliction enhancements
- Continued and additional support for fusion center partnerships

RISS is a resource that saves agencies money and time and produces results. With increased funding, RISS can continue to operate while building on its successes. It would be counterproductive to require local and State RISS members to self-fund match requirements or to reduce the amount of Bureau of Justice Assistance discretionary funding. Agencies require more funding to fight the Nation's crime problem. RISS is unable to make up the decrease in funding that a match would cause, for it has no revenue source of its own. RISS is grateful to provide this testimony at your request and appreciates the support that this committee continuously provides to the RISS Program. For additional information, visit www.riss.net.

[This statement was submitted by Donald F. Kennedy, Jr., Chair, RISS National Policy Group.]

PREPARED STATEMENT OF RESEARCH!AMERICA

Research!America appreciates the opportunity to submit testimony for the record. The Research!America alliance advocates for science, discovery, and innovation to achieve better health for all. We are grateful for the subcommittee's dedicated stewardship over funding for such crucial priorities as the National Science Foundation (NSF). As you consider fiscal year 2020 allocations, we request that the National Science Foundation (NSF) receive at least \$9 billion to grow jobs, empower sustained economic growth, and advance the wellbeing of Americans and populations across the globe.

NSF's portfolio, which is intentionally diverse to maximize the returns on science investment, spans biology, economics, engineering, mathematics, computer science, the social and behavioral sciences, and other high impact scientific disciplines. We firmly believe that robust funding for NSF is a sound strategy for advancing our Nation's strategic interests in an increasingly complex global landscape and meeting the goals and aspirations of the American people.

What the NSF Provides

NSF funds diverse basic and applied research in local universities and other research institutions located in all 50 States, the District of Columbia and three U.S. territories. An estimated 386,000 students, teachers, researchers and postdoctoral fellows were empowered by the NSF in fiscal year 2018. Approximately 90 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 236 Nobel Prize winners, including five Nobel Laureates in 2018. The studies supported by NSF bear on virtually every sector of our economy, support cyber and other crucial areas of national security, and factor importantly into the productive use of big data and other highly promising avenues of research.

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 are using the NSF-funded Stampede super computer at the Texas Advanced Computing Center to design next generation batteries by modeling interactions between atoms. This research is critical for storing energy from new smart grid technologies and wind turbines. The development of more advanced super computers also directly impacts the health and well-being of all Americans by helping researchers more accurately predict natural disasters and aid in the discovery of new therapeutic drugs. This progress would not have been possible without NSF investment in computer science, math and statistics.

NSF-funded research continues to propel progress, often through collaboration across multiple fields. "Lab on a chip" devices can simulate human lungs to find treatments for diseases like COPD, asthma, and lung cancer in a more cost and time efficient manner. A team of chemists, engineers, and physicians have developed new way to evaluate the results of these studies in real time using light, further

speeding up the treatment discovery process. Through NSF's continued support, fields work together to produce cutting-edge research that pushes the fields of medicine, engineering, and biomedical science forward.

Americans Understand the Value NSF Delivers

Since 1992, Research!America has commissioned national and State-level surveys to gauge public sentiment on issues related to research and innovation. One of the most consistent findings over time has been Americans' support for basic research. In our most recent survey, fielded in January of 2019, 80 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." Our surveys have also explored Americans' perspectives on the role of NSF funded tools in advancing key national priorities. For example, a large majority of Americans—83%—assign importance to putting science, technology and engineering to work to strengthen U.S. infrastructure.

NSF is Crucial to Training the Next Generation of American Scientists and Innovators

Our Nation's continued global leadership is inexorably linked to our strength in the fields of Science, Technology, Engineering, and Mathematics (STEM). NSF fosters future American leaders in these strategically important disciplines. Since 1952, NSF has supported more than 57,700 students through Graduate Research Fellowships and has provided grant support to thousands of postdoctoral fellows and young investigators. The agency also engages in innovative educational initiatives such as NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoveries in Engineering and Science), a national initiative to make STEM education more inclusive of underrepresented and underserved populations. 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 difficult and complex task facing the subcommittee as it seeks to prioritize funding in a manner that best serves the American people. In that context, we urge to provide at least \$9 billion for NSF. 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 SEA GRANT ASSOCIATION

The National Sea Grant College Program (Sea Grant) is a joint Federal-State investment that supports the health and resilience of the Nation's coastal communities (including the Great Lakes, Gulf of Mexico, and communities on the Atlantic and Pacific coasts), yielding quantifiable economic, social, and environmental benefits at the national, regional, State, and local levels. It is a program of the National Oceanic and Atmospheric Administration, Department of Commerce.

The administration, for the third year in a row, is recommending eliminating funding for the Sea Grant program, including the Knauss Fellowship Program and research on sustainable aquaculture. The Sea Grant Association (SGA), a non-profit organization dedicated to furthering the Sea Grant Program concept whose members are the academic institutions that participate in the National Sea Grant College Program, strongly opposes the administration's fiscal year 2020 proposal. The SGA is deeply appreciative of the support this subcommittee has consistently provided the Sea Grant program, rejecting past administration proposals to eliminate funding for the program. We urge the subcommittee to continue to support the Sea Grant program when it develops its fiscal year 2020 appropriations bill.

The Sea Grant Association recommends that the National Sea Grant College Program, including the Knauss Fellowship Program, Sea Grant STEM education activities, and research on aquaculture, be funded at a total of \$93.5 million for fiscal year 2020, an amount consistent with the total amount proposed in S. 129 (that passed the Senate unanimously in September 2017). These funds are necessary so that each of the 33 university based programs can best serve the needs of its local and regional stakeholders and partners. These needs have been identified via each program's collaborative strategic planning process with its stakeholders.

In 1966, Congress passed the National Sea Grant College and Program Act that charged the Federal Government to develop a network of Sea Grant Colleges modeled after the Land Grant College system. This model combines research and engagement through its extension services and education programs. Sea Grant extension can be defined as the delivery of scientific research and knowledge to fisher-

men, community leaders, and other Sea Grant stakeholders. From the beginning, it was anticipated that the three pillars of research, extension, and education, and the network of cooperating universities would be mutually supporting. Sea Grant economic impact numbers including 2,500 business created or sustained and 12,500 jobs created or sustained confirm that Sea Grant has benefited the vitality of coastal communities, habitats and ecosystems together with the marine resources upon which they depend far more profoundly than even Sea Grant's founders could have imagined.

Central to the power of the Sea Grant model is the synergistic interplay of goal-directed research conducted by many of our Nation's finest scholars with the rapid and sustained delivery of that knowledge toward solving societally-relevant problems and making more informed choices. Sea Grant's research agenda is informed through stakeholder input and is directed toward solving local, regional and national coastal issues. The education of the next generation in diverse fields is intimately integrated into both Sea Grant's research and extension activities. These activities taken together support the economic and environmental vitality of our Nation's ocean, coast, and Great Lakes and the communities that depend on them. For over 50 years, Sea Grant research, extension, and education have substantively engaged coastal and Great Lakes communities. Sea Grant's mission is to enhance the practical use and conservation of coastal, marine, and Great Lakes resources in order to create a robust and sustainable economy and environment.

Increasing aquaculture production and reducing extreme weather impacts are both key priorities of the Department of Commerce and NOAA. The United States imports about 90 percent of its seafood, creating an annual seafood trade deficit exceeding \$14 billion. With worldwide fish consumption projected to increase by 21 percent in the next decade, our seafood deficit will continue to grow if sustained action is not taken. Sea Grant is a leader in supporting aquaculture research and development that lead to jobs and increased domestic production of safe and sustainable seafood. Through its locally based research, extension, and education programs, its national perspective, and its longstanding role in aquaculture, Sea Grant is ideally positioned to play an expanded role in the Commerce Department's focus on reducing the Nation's seafood trade deficit.

Sea Grant can also assist NOAA efforts to better prepare for and recover from extreme weather and water events by informing observations and developing research-based coastal community resiliency practices. Population density in coastal communities is increasing as people are attracted to the beauty, economic opportunities, and recreational activities offered by these localities. According to the most recent completed census (2010), 39 percent of all Americans live in coastal and Great Lakes counties, and projections suggest that this will increase by another 8 percent by 2020. Sea Grant is helping coastal communities cope with the strain that population expansion places on local resources and the increased need for hazard preparedness planning. In recent years, coastal communities have experienced an increased risk to lives and property from storms and natural disasters. Weather events like hurricanes, tornadoes, and snowstorms have increased in number and intensity, posing threats to people, animals, livelihoods, and ecosystems. In cost-effective ways, Sea Grant is assisting States, regions, and local communities to improve both their preparedness, resilience, and recovery to, challenges due to increased extremes and variability in weather and other natural disasters. Sea Grant is helping coastal communities in Texas, Puerto Rico, North Carolina, South Carolina, Florida and other States recover from Hurricanes Harvey, Irma, Maria, Florence, and Michael and prepare for future severe storms and other catastrophic events.

The \$93.5 million requested for Sea Grant in fiscal year 2020 will continue progress in research, extension, education, and outreach at the local, State, regional and national levels.

In 2017, the Sea Grant program helped generate an estimated \$579 million in economic impacts, created or supported over 12,500 jobs, provided 33 state-level programs with funding that assisted 462 communities improve their resilience, helped nearly 17,700 fishers adopt safe and sustainable fishing practices, helped restore an estimated 700,000 acres of coastal ecosystems, worked with about 1,300 industry and private sector, local, state and regional partners, and supported the education and training of over 1,800 undergraduate and graduate students. The Sea Grant program achieved this with a congressional appropriation in fiscal year 2017 of \$72.5 million, that were leveraged with matching funds.

Sea Grant is a unique program within NOAA that 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 and businesses.

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, National Sea Grant College Program successes can be attributed to its ability to respond to the changing needs of our coastal communities. Sea Grant's programs are integrated into both the National Sea Grant and NOAA's national strategic plans. Each tailored and therefore maximally effective program executes the following objectives:

- Sea Grant has capacity, breadth, and depth.* Sea Grant brings the expertise of its vast network of universities, research institutions, faculty, students, staff, and facilities, with on-the-ground and in-the-field knowledge. This knowledge, bolstered by established ties and credibility with communities and community leaders, results in the conversion of science and technology into practical use and informed decisionmaking.
- Sea Grant facilitates opportunities.* Sea Grant engages partners, stakeholders, and constituents through its nimbleness, capacity for rapid response, and multifaceted ability to address critical issues and needs facing the Nation.
- Sea Grant is proactive.* Sea Grant has engaged in planning, resilience, hazard preparedness and recovery, and participated in the overall "Blue Economy" before the terms were popularized in national programs. Sea Grant has been engaged in an ongoing visioning exercise. For example, in 2016, the Sea Grant network developed a 10-year aquaculture vision that outlines the most pressing needs and opportunities to foster sustainable aquaculture development across the country.
- Sea Grant is there for its stakeholders.* The needs and desires of the nation's taxpayers who live, work, and play in coastal America for products and services that Sea Grant provides are rapidly increasing. This is because Sea Grant is recognized and trusted for its ability to work with local constituents to better understand their needs and deliver relevant information and services.

Local, State, regional, and national partnerships are critical to addressing these and other 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.

For over 50 years, Sea Grant has been at the forefront of 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 \$93.5 million in Federal funding, Sea Grant will leverage significant State and local support, continue to increase the economic development and resiliency of coastal communities, and help sustain the health and productivity of the ecosystems on which they depend.

Thank you for the opportunity to present this testimony.

[This statement was submitted by Dr. Fredrika Moser, President, and Director, Maryland Sea Grant.]

PREPARED STATEMENT OF SEARCH, THE NATIONAL CONSORTIUM FOR JUSTICE
INFORMATION AND STATISTICS

INTRODUCTION

Thank you, Mr. Chairman and Members of the subcommittee, for the opportunity to submit testimony on the Department of Justice (DOJ) funding to be provided for in the fiscal year 2020 Commerce, Justice, Science, and Related Agencies appropriations bill. SEARCH recommends an appropriation of at least \$75 million for the National Criminal History Improvement Program (NCHIP) and the National Instant Criminal Background Check System (NICS) Act Record Improvement Program (NARIP), which is the amount that was included in the 2019 Consolidated Appropriations Act.

SEARCH, The National Consortium for Justice Information and Statistics (SEARCH), is a nonprofit membership organization created by and for the States. SEARCH's Governor-appointed, dues-paying Members from the States and terri-

tories have the responsibility, among other things, to oversee both NCHIP and NARIP within their States.

Over the years, States have made great strides in meeting their criminal history record improvement goals under both programs. Robust funding for these programs in prior years, as reflected in the fiscal year 2018 and fiscal year 2019 Commerce, Justice, Science and Related Agencies appropriations was welcomed by the States who use the funding to modernize and enhance operations and technology, and to more effectively share data for critical criminal justice and public safety decisions. NCHIP funding has helped States vastly improve the quality and completeness of criminal history records, and to make this information immediately available and broadly accessible nationwide. NARIP funding has significantly improved information for firearms eligibility determinations via the NICS system, including increasing mental health records availability to NICS by nearly 1600 percent.¹

There is still work to be done to realize a truly complete and accurate national criminal history background check system. That system not only informs a variety of justice and public safety decisions, but also and increasingly critical noncriminal justice decisions, such as those regarding applicants for employment and licensing; volunteers who work with children, elderly and other vulnerable populations; and individuals purchasing firearms. It is important to recognize that information stored in State criminal history record repositories throughout the Nation and used for criminal justice decisionmaking (such as at arrest, prosecution, sentencing, and community supervision), is precisely the same information that is required for other public safety and noncriminal justice decisions (such as employment and licensing decisions and for firearms eligibility determinations).

The States are leveraging prior Congressional funding to engage in broad-scale initiatives and partnerships with other State agencies to improve and enhance criminal history record information collection and sharing. These partnerships between the criminal history repositories and State courts, corrections, prosecution and mental health agencies—among others—have been stimulated through these substantive grant funding streams, which enable the development of enterprise solutions to address universal interagency information sharing challenges. Continued progress and substantive advances rely in no small measure on new funding in fiscal year 2020.

SEARCH appreciates the subcommittee's recognition that while both NCHIP and NARIP focus on improvements to the efficiency, effectiveness, timeliness, and accuracy of criminal history record and associated data for decisionmaking purposes, each program emphasizes specific and distinct goals.

NCHIP allows States to focus on a broad range of criminal history improvement activities that are unique and specific to each State. States have identified and prioritized the improvements needed in their systems to support critical decisionmaking at the State and national level for both criminal and civil decisions. Some of those priorities include improving arrest records, increasing disposition reporting, expanding conviction record availability in the Federal systems, and enhancing positive identification capabilities.

Maine, for example, has used NCHIP funding to locate missing criminal history record dispositions or fingerprint-supported records, specifically focusing on improving felony, sex offender and domestic violence records. Connecticut has used NCHIP funding to migrate paper criminal history record dispositions into a searchable electronic format to improve the overall efficiency in searching disposition records and reducing the disposition backlog. South Carolina has used NCHIP funding to hire individuals to conduct training to ensure that records conform to FBI standards, add thousands of dispositions to the State's criminal history records repository, and process thousands of expungements.

The flexibility of NCHIP funding allows States to enhance enterprise information sharing and data used to support a myriad of key decisions in the justice arena each and every day. For example, the lack of positive, biometric identification associated with criminal history records is often a major challenge. Kentucky used NCHIP funding to develop a Court Fingerprint Notification application within its E-Warrants system. When an offender appears before a judge, the judge will be automatically notified if the offender's fingerprints are not on file, enabling the judge to order that fingerprints be taken, thereby supporting efforts to establish and verify identity with biometric precision. Michigan used NCHIP funding to create an instructional training video to provide local agencies with easily accessible information regarding the proper submission of fingerprints and criminal history record data.

In contrast to NCHIP grant funding, NARIP funding focuses specifically on improving information sharing with NICS for firearms purchases. There are 10 cat-

¹ <https://www.ncjrs.gov/pdffiles1/bjs/grants/249793.pdf>

egories established in Federal law that disqualify an individual from purchasing firearms. They include disqualifiers such as felony conviction information, fugitive from justice, domestic violence protection order, involuntary commitment to mental health institution, etc.

Nearly 90 percent of the records used to make these disqualifying decisions are based on the information that States provide to NICS.² That information comes from three key sources: the Interstate Identification Index (III—the national system for exchanging criminal record information), the National Crime Information Center (NCIC—an automated, nationally accessible database of crime data, criminal justice and justice-related records, including wanted persons and protection orders) and the NICS Indices (created for presale background checks of firearms purchase). Any efforts States undertake to improve the information contribution to any of these databases enhance the effectiveness of firearms eligibility decisionmaking.

NARIP grants allow States to improve information made available to NICS, such as increasing the number of disqualifying mental health records into the NICS Indices and domestic violence orders of protection into the NCIC. Such targeted funding assists States in meeting the challenges specifically associated with getting information to the system. As valuable as the program is, however, NARIP funds are only available to 31 States at this point, since not all States qualify for the funding.³

States that do qualify for NARIP funding can target information sharing efforts to improve their contributions to NICS. For example, NARIP grant funds have significantly improved the records that New York State makes available to the NICS Indices. New York State can now efficiently transmit records of mental health involuntary admissions and civil guardianships to NICS. New York State also collects and reports Misdemeanor Crimes of Domestic Violence (MCDV) convictions to NICS so that vulnerable spouses, children and intimate partners are further protected. Nebraska has utilized NARIP funding to develop a Protection Order Portal that enables local law enforcement to efficiently enter protection orders into NCIC, making them available for NICS checks.

SEARCH makes three key recommendations regarding NCHIP and NARIP funding:

1. Support NCHIP funding for improvements to State criminal history record information to robustly support criminal and civil decisionmaking nationwide.

The NCHIP program has been successful in helping States improve the accuracy, reliability and completeness of their automated criminal history record systems. Meaningful NCHIP funding will more broadly improve the Nation's criminal justice information sharing backbone. Moreover, the Federal investment can be leveraged many times over by contributing to the ability of State and local criminal justice agencies to provide timely, accurate and compatible information to Federal programs, such as the III. And, importantly, all States qualify for funding under NCHIP.

NCHIP funding since fiscal year 2014 has reinvigorated an important and timely program. Because State criminal history records are the principal source for the FBI's III database, any constraints on the States weakens the ability of many State and Federal programs to identify threats and keep our Nation safe.

2. Continue to invest in improving background screening for firearms purchases.

We urge Congress to continue the investment in the Federal-State criminal background screening partnership that comprises NICS. NICS is a critical tool in the fight against gun violence, and the States and FBI rely on NICS every day for informed decisionmaking on firearms transactions.

There are still many opportunities for improving the timeliness and availability of information to NICS. Millions of records related to felony convictions, cases under indictment or information, fugitives from justice and drug abusers—all NICS disqualifying categories—remain open and unavailable to NICS. While States have made significant strides in making mental health records available to NICS, many States need continued support to target information sharing in the other prohibitor categories to further improve their information sharing to NICS.

3. Provide an appropriation of \$75 million for NCHIP and NARIP.

²FBI Criminal Justice Information Services III Statistics, February 1, 2013

³NARIP has two main requirements: States must (1) establish a process where those adjudicated as "mentally defective" can seek to reinstate their right to purchase a firearm, and (2) comply with a process to estimate the number of NICS disqualifying records they maintain. Only 31 States have met requirement #1.

Providing at least level funding for NCHIP and NARIP in fiscal year 2020 will allow States to utilize these programs to improve their criminal history records in support of general criminal justice and civil decisionmaking, as well as improvements to background screening for firearms purchases.

CONCLUSION

SEARCH thanks the Chairman and Members of the subcommittee for their steadfast support of these programs in the face of daunting budget challenges. Given the critical importance of criminal history record information for a broad spectrum of decisions that keep our citizens safe from predators, terrorists and other criminals, it is a worthwhile and needed investment. The accuracy, completeness and reliability of the Nation's criminal history record system is more important than ever before, for criminal investigations, officer safety, sentencing and other criminal justice purposes; for expungement and other reentry strategies; for homeland security and anti-terrorism purposes; for public noncriminal justice purposes, such as licensing and employment suitability and firearms purchases; and for research that provides critical guidance in shaping law and policy.

SEARCH encourages Congress to allow States to tailor their use of NARIP and NCHIP funding to address the specific challenges each State faces, as the examples discussed earlier clearly illustrate, in making more records available to the national system.

On behalf of SEARCH's Governor-appointedees, and the thousands of criminal justice officials who benefit from SEARCH's efforts, I thank you for your consideration.

[This statement was submitted by David J. Roberts, Executive Director.]

PREPARED STATEMENT OF THE SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS 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 2020 by providing NSF with \$9 billion to advance both core research areas and NSF's Big Ideas for Future Investment. These Big Ideas dramatically propel interdisciplinary research forward while revolutionizing quantum communications, medicine, and other areas. In particular, we urge you to provide strong support for the Research and Related Activities Account (RRA) 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 2020 and beyond. *In particular, we join with the research and higher education community and request that you provide NSF with at least \$9 billion in funding for fiscal year 2020.* After years of stagnant funding before fiscal year 2018, 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 \$9 billion would help the agency address critical unmet national research needs and historical underinvestment.

As we are reminded every day, the Nation's 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 cyberspace, terrorist networks, the human brain, or the energy grid. 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, 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 64 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 supports NSF's investments in the *10 Big Ideas for Future Investment*, which represent major scientific challenges where sustained investment can make a transformative difference. In particular, SIAM urges support for the Harnessing the Data Revolution, Understanding the Rules of Life, and Quantum Leap Big Ideas, which each have revolutionary potential. SIAM applauds NSF's programs in these areas, such as the Institutes for Data-Intensive Research in Science and Engineering, Quantum Leap Challenge Institutes, TRIPODS¹ Institutes, and the NSF-Simons Research Centers for Mathematics of Complex Biological Systems. While Big Ideas investments are important, SIAM urges Congress to provide sufficient NSF support for core programs, 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 (RRA) to enable robust funding for the Division of Mathematical Sciences (DMS), the Office of Advanced Cyberinfrastructure (OAC), and other core programs 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

¹Transdisciplinary 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

Funding for NSF's *Education and Human Resources* (EHR) directorate has stagnated for many years leaving 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 is deeply concerned by proposals in the budget request to cut the *Graduate Research Fellowships* and *CAREER* awards 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 2020.

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 2020 appropriations process.

[This statement was submitted by Lisa Fauci, President, and Anne Gelb, Vice President for Science Policy.]

PREPARED STATEMENT OF THE SOCIETY FOR INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

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 \$9 billion for the National Science Foundation (NSF), including strong support for the Directorate for Social, Behavioral, and Economic Sciences (SBE), in the fiscal year 2020 appropriations process; and include 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.

SIOP and its members recognize and appreciate the challenging fiscal environment in which we, as a nation, currently find ourselves; however, we also 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, policy-making, and interprofessional collaboration. The evidence base derived from basic research in the science of organizations is applied throughout the public and private sectors. For example, Federal research agencies across the government, including the Department of Defense (DoD), National Aeronautics and Space Administration (NASA), the Department of Justice (DOJ), NSF, etc. invest in I-O research that enhances organizational effectiveness and human performance. Findings from this work also improve the effectiveness of the private sector and Federal workforces.

Additionally, new pressures to address privacy, performance, and safety in the workplace have further expanded the need for Federal investment in social and behavioral science research, especially in I-O psychology, emphasizing the importance of the entire work system in addition to the individual. Cybersecurity threats, subtle and formal discrimination, talent shortages in technical jobs, displacement, and a host of other recent events and conditions have catalyzed the development and application of new methodologies for studying how people think and behave in the workplace.

SIOP also supports NSF's dedication to its "10 Big Ideas,"¹ including *Work at the Human-Technology Frontier*, 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.

With funding assistance from NSF and other Federal agencies, the field of I-O psychology has developed data-driven methods to predict successful teams, address workplace dysfunction, improve the work experience of individuals, and enhance job performance and employee engagement. Use of this rich knowledge and understanding has informed and benefitted both private companies and the public workforce. 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: improving airline safety through Crew Resource Management, transitioning veterans and service members to civilian jobs, managing age diversity in the workplace, accounting for the technology-enabled workforce, and mitigating the impact of furloughs on the Federal workforce, 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 2020 NSF budget of \$9 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

Recently, I-O psychologists with expertise in SciTS have been engaging with NSF program officers and leadership 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 Tech-

¹ National Science Foundation-proposed "10 Big Ideas" (https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf?dm_i=1ZJN,4FGWL,E29O0Q,GB891,1)

nology Centers; Convergence Accelerators). SIOP feels this is important because as NSF increasingly encourages and promotes team science, taking additional steps to ensure evidence-based team science is considered in multi-partner initiatives would improve communication between researchers, productivity, efficiency and cost-effectiveness.

NSF has funded several team science studies through the Directorate for Social, Behavioral, and Economic Sciences (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. Appropriations report language to further encourage this interest would build on existing momentum and 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.—The Committee encourages NSF to continue to seek ways to implement the science of team science as the agency develops new models and approaches for funding large-scale and cross-disciplinary science. In particular, the Committee encourages NSF to ensure that it is implementing the recommendations from the 2015 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. Talya Bauer, President, and Jeff Hughes, Executive Director.]

PREPARED STATEMENT OF THE SOCIETY FOR NEUROSCIENCE SUPPORT FOR THE NATIONAL SCIENCE FOUNDATION

Mr. Chair and Members of the subcommittee, I am Diane Lipscombe, President of the Society for Neuroscience (SfN), and it is my honor to present this testimony on behalf of SfN in support of increased funding for the National Science Foundation (NSF), to \$9 billion, for fiscal year 2020. I am offering this testimony in my capacity as President of SfN, now entering its 50th year, an association of nearly 37,000 neuroscientists from all 50 States and around the world. Our members stand with the broader scientific community in requesting increased funding for NSF in fiscal year 2020, which will advance understanding of basic brain functions, enable the development of new technologies to study brain function, and catalyze yet unimagined discoveries in neuroscience research. Moreover, SfN urges Congress to provide relief from the draconian cuts set to take effect as a result of the Budget Control Act (BCA). By raising the caps directed by the BCA, Congress can ensure that we do not backslide on previous support for scientific research and discoveries. We also urge the Committee to complete their appropriations work in advance of the September 30 deadline to provide predictability and stability to scientists relying on Federal funding to support their work.

As a neuroscience researcher and Director of The Carney Institute for Brain Science at Brown University, I see the impact of Federal funding for neuroscience research daily. For example, at Brown University, we are developing new approaches to the brain machine interface, which could dramatically improve the quality of life of individuals who depend on prosthetic devices or who may have restricted mobility, such as paralysis resulting from a stroke or traumatic brain injury. The success of this technically-demanding research, depends on the combined skills of neuroscientists, computer scientists, engineers, neurologists, neurosurgeons and mathematicians, and other disciplines to help those impacted regain movement and independence using brain-controlled technology. Collaboration across scientific

²<https://www.nap.edu/catalog/19007/enhancing-the-effectiveness-of-team-science>

disciplines continues to advance new research involving computational neuroscientists, cognitive neuroscientists, and data scientists in the Carney Institute for Brain Science at Brown. This collaboration develops new mathematical approaches for extracting content rich information from large data sets of human brain activity. Computational tools are now essential to neuroscience research as we study massive datasets resulting from the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, including those that map the millions of connections between neurons and enable us to understand high level brain function.

NSF funded research has contributed significantly to transformative scientific discoveries. Notably, since 1952, 217 Nobel Prize recipients were recipients of NSF funding. NSF provides the investments needed in basic science to bring about the next breakthroughs in technology, health, and education toward improved well-being for all Americans. Increasing the NSF budget is thus critical to the continued ability of researchers to make impactful scientific advancements, speed innovative research, and allow for the development of powerful tools to advance our understanding of brain function. As we age, the incidence of brain disease grows at a frightening rate and we must double down on our collective efforts to diagnose and treat them.

Successful, impactful neuroscience research requires collaboration across disciplines and an unbroken series of funding streams, and NSF-funded research allows for some of our most significant scientific achievements. As we take on more and more challenging research problems, for example: “why do neurons die too soon in one in three of people over the age of 65?”, we are increasingly dependent on new tools to help us examine aging human brains without causing damage. These endeavors depend on support from the Federal Government—in fact, 27 percent of the Federal budget for basic science is funded by NSF. NSF funding is critical for stimulating new ideas and tools to study the human brain, the most “complex biological structure on Earth”,¹ in both normal and diseased patients.

As the subcommittee continues its work for fiscal year 2020, we ask that Congress ensure that final fiscal year 2020 funding is approved before the end of fiscal year 2019. Reliance on Continuing Resolutions (CR) in place of regular appropriations has immediate and critical implications for scientists working in the neuroscience field. We are currently experiencing severe restrictions in the ability of NSF to fund the work of many basic young scientists of extraordinary potential. Even worse are government shutdowns, which pause all science being performed at affected agencies. The 35-day shutdown that occurred earlier this year caused a great deal of damage to NSF-funded projects, halting scientific discovery. There is no substitute for robust, sustained, and predictable funding for NSF-supported research.

The Committee’s support for NSF’s “Understanding the Brain” (UtB) initiative, which is part of the cross-agency BRAIN Initiative, is a critical piece of our Nation’s neuroscience effort. Through the UtB initiative, NSF empowers researchers to study principles and processes underlying memories, thoughts, and complex behaviors. Federal investment into the BRAIN Initiative, including NSF funding, will enable the development of new tools and technologies needed to more deeply map brain functions for a plethora of therapeutic applications.

Advances in basic science will ultimately speed discoveries in clinical and translational research. Our discoveries, sometimes unexpected, advance basic knowledge of brain function and reveal new therapeutic targets to treat brain disorders affecting millions of people around the world. Support for basic neuroscience research, including at NSF, is a critical function of the Federal Government in advancing the foundation for advancements in public and individual health, education, and workforce development. We are extremely encouraged by the pace of discovery in neuroscience and the promise it offers for future treatments of neurological disorders. Some recent, exciting advancements include the following:

THE IMPACTS OF NEUROSCIENCE RESEARCH

Regulation of neuronal communication

My research seeks to understand how neurons communicate with each other. Brain function is defined by neurons communicating information from cell to cell, and from one brain region to another. Communication between neurons is carried across spaces called synapses by neurotransmitters. The number of neurotransmitters available to transmit these signals is controlled by “gatekeepers,” which ensure appropriate size responses. Many therapeutic drugs used in the clinic act on these molecular gatekeepers to dial up or down the flow of communication

¹ https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=128239

in the brain. I describe the basic properties of gatekeepers and show how they are generated in specific neurons of the brain and nervous system. My work is basic in nature, but these findings inform the development of new therapeutics for treating major neurological diseases, including chronic pain, migraine, epilepsy, and neuropsychiatric disorders.

Research infrastructure to improve understanding of the brain

Improving our understanding of the brain requires a national research infrastructure, where partnerships can be leveraged towards advances in neuroscience. NSF's Next Generation Networks for Neuroscience (NeuroNex) program facilitates partnerships and develops innovative capabilities, including resources, theoretical frameworks, and computational modeling to advance neuroscience research. NSF support for NeuroNex aids in developing new conceptual tools for understanding how neuronal activity gives rise to behavior. In one of the NeuroNex awarded projects, a team of scientists, including myself and three others, are developing new light-emitting molecules—think of a fire fly—for use in studying and correcting abnormal brain activity. The neurotechnologies arising from NeuroNex National Hubs will provide approaches to record, visualize, and manipulate neuronal activity, facilitating diagnosis and treatment of abnormal brain function. An essential aspect of all NeuroNex awards are activities that support workforce training to ensure that we prepare the next generation of neuroscience researchers to use and improve on technologies for improving our understanding of the brain. NSF, therefore, makes a unique contribution to not only developing new technologies in neuroscience but also combining this with training neuroscientists—both are critical to ensure that scientific ideas are translated into technologies and advanced treatments for neuroscience.

Interdisciplinary approaches to neuroscience

Understanding how the human brain functions requires integrative research teams of the best scientists from a range of disciplines, including mathematics, engineering, and biology. NSF recognizes the power of this level of collaboration to advance research and has funded several interdisciplinary projects in neuroscience and cognitive science. One NSF funded project investigates how networks of neurons work together to perceive the world around us and produce coordinated muscle movements. This requires simultaneous, parallel recording of a massive number of brain regions for prolonged periods of time, followed by utilizing machine learning methods to extract meaningful information. This work, only possible through collaborations of neuroscientists with data scientists and computer scientists, has the potential to benefit individuals who have lost the ability to control their limb movement due to brain injury or disease. The ability to record from many individual regions of the brain is revolutionizing our ability to understand complex brain function, and the use of neural stimulation to correct abnormal brain activity is being refined. NSF is funding collaborations with mathematicians, engineers, and neuroscientists to incorporate smart, closed-loop feedback systems to improve therapeutic brain stimulation only when necessary for patients with limited ability to move their limbs, including Parkinson's disease patients and those suffering from chronic pain. In these exciting times for science, NSF is a critical front-line funder of these and many other cross disciplinary research collaborations.

SUMMARY AND CONCLUSION

NSF funding is critical for the future of biomedical research and for training the next generation of researchers, but it is also a major driver of the United States' economy. While our Nation is the global leader, other countries are also investing increasing amounts into biomedical research. Congress must continue to support basic research in order to fuel scientific discoveries, maintain our preeminence as a leader in the field, and continue to drive the United States economy into the future. Nearly one in five U.S. adults live with mental illness, early childhood stress has lasting impacts through adulthood, and the growth of age-related neurological disorders is still increasing. The only way to change the trajectory of neurological and psychiatric disorders is to increase Federal Government investment in biomedical research.

For these reasons, the SFN urges the subcommittee to appropriate no less than \$9 billion to NSF. Just as significantly as providing Federal funds, we also implore you to complete your action on the fiscal year 2020 appropriations bill on time, thus avoiding any need for a Continuing Resolution or any chance of a government shut-down, as we saw earlier this year.

On behalf of the Society for Neuroscience, we thank Congress for its support and look forward to working with you as you undertake your work on the fiscal year

2020 appropriations process. SfN is here to be a resource for you, now and into the future, in order to ensure that basic research remains central to our economy and is supported by our Nation's leaders.

[This statement was submitted by Diane Lipscombe, President.]

PREPARED STATEMENT OF THE HON. TIMOTHY MCCARTHY, DISTRICT COURT JUDGE,
JOHNSON COUNTY, KANSAS

ON BEHALF OF THE

NATIONAL ASSOCIATION OF DRUG COURT PROFESSIONALS

Chairman Moran, Ranking Member Shaheen and distinguished Members of the subcommittee, I am honored to have the opportunity to submit my testimony on behalf of this Nation's over 3,000 treatment courts, including drug courts and veterans treatment courts, and the 150,000 people they will connect to life-saving addiction and mental health treatment this year. Given the unprecedented success of these programs, and the urgent and growing need for solutions to the addiction epidemic that promote both public health and public safety, I am requesting the Congress maintain the enacted fiscal year 2019 numbers of \$77 million for the authorized Drug Court Discretionary Grant Program (Public Law 115-271) and \$22 million for the authorized Veterans Treatment Court Program at the Department of Justice (Public Law 114-198).

As a judge, I see firsthand the devastation addiction causes individuals, their families and the community. Before treatment courts, there were few sentencing options to break the cycle of addiction and related crime. I now have the honor of presiding over the Johnson County Veterans Treatment Court, the first such court in the State of Kansas. Federal funding from the Department of Justice helped us launch, sustain and grow our program. Simply put, it has saved lives.

Our veterans treatment court opened in early 2016 after we recognized that too many veterans were coming before the courts to face charges for crimes stemming from substance use and mental health disorders. Often, these are men and women who served their country honorably—many in combat—and have simply lost their way.

Johnson County resident, Evan Zimmerman served 4 years in the United States Marine Corps, traveling the world at the ready to defend our freedom. When he completed his service, he struggled to adjust to life at home. Alcohol helped him cope, opioids kept him numb. His drug use spiraled and eventually he was using heroin and methamphetamine. As Evan's life fell apart, he drifted further and further away from the honorable soldier he once was. Like many, he turned to stealing to support his habit. When I met him, he was charged with felony theft and facing several years in prison.

In veterans treatment court, Evan was surrounded by other veterans making it easier to admit he had a problem and accept the help that was being offered. With the support of the veterans treatment court team, Evan received mental health treatment and, as he began to embrace recovery, he was connected to additional local, State and Federal resources to put his life back together. Along the way, Evan met regularly with a volunteer veteran mentor who helped keep him on the right path.

I watched as Evan slowly turned back into the courageous young man who signed on the dotted line to serve his country. I saw him become a dedicated father, find passion in his work and be at service to his community.

Today, Evan is a proud graduate of the Johnson County Veterans Treatment Court. He has full custody of his 2-year-old daughter and is a manager for a screenprinting company where he supervises 10 people. I often think of how much better off we are with Evan in the community as opposed to behind bars.

I led the effort to establish a veterans treatment court in Johnson County. In 2014, we received DOJ-funded training on starting a veterans treatment court. This training was instrumental to our successful planning and, ultimately, to Evan's success. Two years ago, we were awarded a DOJ grant so that we could expand our capacity. I know firsthand the impact and importance of this Federal funding. Had it not been for the DOJ funding, we would not be able to serve more veterans in crisis.

The training we received ensured our veterans treatment court follows best practices. Our program includes a track for both diversion and probation cases. We determine eligibility by using an evidence-based risk/needs assessment and, by partnering with our county mental health association, we are able to accept some

veterans who are not eligible for services through the Department of Veterans Affairs. For those who are eligible, a veterans justice outreach representative from our local VA medical center is in court to ensure they are connected to evidence-based treatment—including addiction medication when appropriate.

I work with treatment providers, law enforcement, probation, defense and prosecution to provide ongoing supervision, support and accountability. Our team responds to non-compliance swiftly and appropriately, and rewards our participants when they achieve an important milestone. Over the course of 12 or 18 months, we address the myriad of issues that may be preventing long-term recovery.

Research continues to confirm that this comprehensive approach works. The Government Accountability Office finds drug courts reduce crime by up to 58 percent. Widely regarded as the most comprehensive study on drug court to date, the Department of Justice National Institute of Justice Multi-Site Drug Court Evaluation (MADCE) confirmed drug court significantly reduces both drug use and crime, and found cost savings averaging \$6,000 for every individual served.

This community-based approach identifies and meets individual needs beyond clinical treatment. The MADCE found drug courts improve education, employment, housing and financial stability for nearly all participants. They are proven to promote family reunification, reduce foster care placements and increase the rate of addicted mothers delivering babies who are fully drug-free.

In 2016, Community Mental Health Journal released the first published study on veterans treatment courts and concluded that participating veterans experienced significant improvement with depression, PTSD and substance use, as well as with critical social issues including housing, emotional well-being, relationships and overall functioning. The study further concluded that veterans who receive trauma-specific treatment and mentoring not only experienced better clinical outcomes, they reported feeling more socially connected.

Behind the statistics, however, are real people who come before me mired in the deepest depths of addiction; individuals with little hope for a future without drugs; who've been given up on by their friends and families. People like Don Miller, who spent 4 years in Iraq with the United States Army. For years after coming home he was haunted by the combat he had experienced, his anxiety exacerbated by untreated post-traumatic stress disorder (PTSD). He turned to substances to cope and his life spiraled out of control. When he first appeared before me in veterans treatment court, he was facing a plethora of legal, financial, family, medical and even dental issues. Don could have been lost to the system, but instead we went to work helping him rebuild his life.

In January, Don graduated from veterans treatment court. No one in attendance will forget what he said that day. During the ceremony he held up a crisp \$20 bill and crumpled it into a ball. He then unfolded it and observed that the value of the bill was unchanged. He said: "No matter how life sullies our minds, souls and beliefs, human beings still have value. I thought there was no way to ever get back to being a hero, whether it be in the eyes of society or in the eyes of my own wife and children... veterans court really stepped in and restored my faith in humanity. They've really shown me sincere, true empathy and really took some of those sorrows that I was carrying around, some of those burdens, off my back."

Veterans treatment court gave Don the opportunity for redemption. Not only that, it gave his wife back her husband, his children their father, and our community an inspiring civic asset.

Today, there are 15,000 veterans like Evan and Don participating in over 400 veterans treatment courts across the country. This is a fraction of the 150,000 individuals who are currently receiving treatment in a drug court or veterans treatment court nationwide.

What started as an experiment three decades ago, drug courts and veterans treatment courts are today the most successful strategy for addressing addiction and mental health in the justice system. Like so many communities, Johnson County has been devastated by the opioid epidemic and the greater addiction epidemic gripping this Nation. Drug courts and veterans treatment courts ensure there is an effective, evidence-based response that saves lives, reunites families and makes the community safer.

I encourage this committee to focus on proven programs which guarantee financial returns and measurable success. There is no better example than drug courts and veterans treatment court.

PREPARED STATEMENT OF THE TRIBAL LAW AND POLICY INSTITUTE

On behalf of the Tribal Law and Policy Institute (TLPI), this testimony addresses important programs in the Department of Justice and Department of Commerce. 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. Specifically, TLPI joins the National Congress of American Indians (NCAI) in requesting:

Agency and Program	NCAI Fiscal Year 2020 Request
DOJ: Tribal Grants.—Eliminate competitive grant funding process and utilize DOJ appropriations as base funding where Tribes determine priorities.	Use DOJ appropriations as base funding with Tribes setting own priorities
DOJ: Tribal Set-Aside from Office of Justice Programs	Create a 10 percent Tribal set-aside for all discretionary Office of Justice Programs (OJP) programs
DOJ: Tribal Youth Program under the Juvenile Accountability Block Grants Program.	\$25,000,000
DOJ: Crime Victims Fund	Maintain the 5 percent set-aside for Tribal governments
DOJ: Community Oriented Policing Services (COPS) Tribal Law Enforcement.	\$52,000,000
DOJ: Tribal programs under the Violence Against Women Act	Provide full authorized amount
Commerce: 2020 Census	Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020

DEPARTMENT OF JUSTICE

The public safety problems that continue to plague Tribal communities are the result of decades of gross underfunding for Tribal criminal justice systems; a uniquely complex jurisdictional scheme; and the historic, abject failure by the Federal Government to fulfill its public safety obligations on American Indian and Alaska Native lands. Crime rates in Tribal communities are among the highest in the Nation and American Indians and Alaska Natives experience rates of violent crime that are 2.5 times the national average. Residents and visitors on Tribal lands deserve the safety and security that is taken for granted outside of Indian Country. Increased and streamlined funding in the following program areas will have a huge impact on safety in Tribal communities for Tribal citizens, residents, and visitors to Tribal lands.

Reform the CTAS Process.—DOJ must rethink how it administers Tribal funding. The current Coordinated Tribal Assistance Solicitation (CTAS) process needs to be improved in regard to transparency of originating funding streams, how Tribes are required to apply for funding, and how grant awards are made and managed. The current solicitation is incredibly burdensome for Tribes and requires Tribes to shoehorn their needs to meet DOJ’s funding priorities. It requires Tribes to coordinate and prove strategic coordination across purpose areas and agencies, a requirement not imposed on their State counterparts. Yet despite a single solicitation, the purpose areas are not meaningfully coordinated such that multiple grant awards results in multiple administering agencies all with varying requirements, placing a tremendous unnecessary administrative burden on Tribal governments.

Continue to include Tribal governments in disbursements from the Crime Victims Fund (a mandatory account).—The Crime Victims Fund (CVF) is the Federal Government’s primary funding source for providing services to victims of crime. TLPI expresses our sincere gratitude to appropriators for providing a direct, non-competitive funding stream for Tribal governments from the CVF for the first time in fiscal year 2018 and again in fiscal year 2019. This was an immense victory! For this funding to achieve its purpose, however, it needs to be recurring funds that Tribal governments can plan on in order to ensure program stability for victims for the long term. We urge appropriators 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.

Importantly, these funds must be meaningfully distributed such that Tribes have actual access to these funds. fiscal year 2018 funds were distributed via the burdensome CTAS process as detailed above. Worse, however, CTAS did not announce the sudden funding change in this purpose area, or its intention to disburse the new set-aside funds through this competitive process that uses DOJ priorities. This is an inadequate attempt to distribute these necessary funds to Indian country, which

through this set-aside, Congress has mandated. CTAS was never the appropriate mechanism for disbursement. The funds should be disbursed via formula base funding to all Tribes. But especially because CTAS did not indicate that the OVC purpose area was now funded by the set-aside, any analysis of the number or quality of CTAS applications simply cannot be used as a metric for Tribal interest or need.

Additionally, we encourage DOJ to take a broad view of the types of victim services programming that can be supported through DOJ funding. The needs in tribal communities differ in significant ways from State and local communities. Victims in Tribal communities are in need of traditional victim services. They also need, however, to know that there is 9-1-1 service in their communities and a law enforcement officer who can respond when criminal victimization is occurring. We encourage DOJ to ask Congress for additional flexibility in the use of CVF funds in Tribal communities.

Create a streamlined Tribal allocation across Office of Justice Programs (OJP) programs.—For several years the administration has proposed bill language that would streamline and consolidate OJP Tribal programs by allocating 7 percent from all discretionary OJP programs to address Indian country public safety and Tribal justice needs. In past years, both the House and Senate CJS Subcommittees have supported this request, but it has never been enacted. One of the biggest shortcomings of DOJ Tribal funding is that it is administered as competitive funding. In order to obtain this funding, Tribal nations must compete against each other under priorities and guidelines established by DOJ. As a result, Tribal nations must develop projects that align with changing DOJ priorities and cannot count on funding continuing beyond the current grant period. A streamlined OJP Tribal allocation would significantly improve the Federal funding process. Further, the Tribal allocation would give Tribal nations the flexibility to develop a detailed strategic plan on how best to spend those resources.

If Congress declines to adopt the flexible allocation across OJP programs, restore fiscal year 2010 levels of \$25 million in funding for the Tribal Youth Program under the Juvenile Accountability Block Grants program.—Although Native children comprise only 2.2 percent of the overall youth population, they are arrested at a rate of more than two-to-three times that of other ethnic groups. According to a recent DOJ report, “[s]ubstance abuse, depression, and gang involvement fuel a vast majority of the offenses for which American Indian juveniles are disproportionately confined.” Funding for the Tribal Youth Program has decreased significantly in recent years (fiscal year 2018 disbursed only \$3 million to TYP grantees, up from \$1.9 million in fiscal year 2017) and should be restored to its fiscal year 2010 level of \$25 million.

Increase funding of Tribal law enforcement programs under DOJ’s Community Oriented Policing Services (COPS) Grants to \$52 million.—Since the creation of the COPS Office, more than 2,000 grants totaling more than \$400 million have been awarded to Tribal nations to hire more than 1,700 new or redeployed law enforcement officers. It has also helped Tribal nations to obtain necessary law enforcement training, equipment, vehicles, and technology. Yet, there is still a tremendous unmet need within Tribal justice systems for more COPS funding. The COPS Office has acknowledged that due to limited resources, it has not been able to adequately fund Tribal justice systems, particularly in the area of hiring/retaining Tribal law enforcement officers. Indian Country urges Congress to significantly increase funding for Tribal law enforcement programs under the COPS program.

Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for Tribal implementation of VAWA special domestic violence criminal jurisdiction.—It is estimated that over 85 percent of American Indian and Alaska Native women will experience violent victimization in their lifetimes. 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.

The Violence Against Women Reauthorization Act of 2013 (VAWA 2013) recognized and affirmed the inherent sovereign authority of Indian Tribes to exercise Special Domestic Violence Criminal Jurisdiction (SDVCJ) over all persons—Indian and non-Indian—who commit crimes of dating violence, domestic violence, and violations of protection orders within Indian country. The bill authorized \$5 million per year for 5 years for Indian Tribes to implement the VAWA 2013 provisions and otherwise strengthen Tribal justice systems. In fiscal year 2019, \$4 million was appropriated for this program. We urge Congress to appropriate the full amount authorized for VAWA implementation purposes so that more communities are able to take advantage of this lifesaving law.

DEPARTMENT OF COMMERCE

TLPI agrees with the NCAI Commerce Department funding recommendations, but we wanted to highlight the following.—Provide the Census Bureau with at least \$8.45 billion in fiscal year 2020. An accurate census count is necessary to ensure the fair distribution of billions of dollars to Tribal nations and American Indian/Alaska Native people across the United States. Native people, especially on reservations and in Alaska Native villages, have been historically underrepresented in the census. In the 2010 Census, the Census Bureau estimates that American Indians and Alaska Natives living on reservations or in Native villages were undercounted by approximately 4.9 percent, more than double the undercount rate of the next closest population group. The President's Budget request was significantly lower than Secretary Ross's estimates of overall costs, and we urge Congress to ensure sufficient funding for a successful 2020 Census, including funding for Questionnaire Assistance Centers, which currently are not included in the Census Bureau's operational plan. With only half the number of Regional Census Centers and local census offices across the country, it will be important to expand the field footprint, to provide 'safe space' for people who do not have reliable Internet access, are wary of using the telephone to respond, or need assistance filling out a paper form, to meet with sworn Census Bureau employees near where they live.

CONCLUSION

The underfunding of Tribal justice systems is a dereliction of the Federal trust responsibility that results in lost lives, high rates of criminal victimization, and unaddressed trauma for generations of victims. Most recently, the BIA submitted a report to Congress estimating that to provide a reasonable base level of funding to all federally-recognized Tribes: \$1 billion is needed for Tribal law enforcement, \$1 billion is needed for Tribal courts, and \$222.8 million is needed for detention (we are not aware of a similar estimate of need for traditional victim services programs). Based on recent appropriation levels, BIA is generally funding Tribal law enforcement at about 20 percent of estimated need, Tribal detention at about 40 percent of estimated need, and Tribal courts at a dismal 3 percent of estimated need. We join NCAI in encouraging the DOJ to consider asking Congress for additional flexibility in the use of CVF funds in Tribal communities. In addition to direct appropriation of Tribal specific funding, we encourage the DOJ to take a broad view of the types of victim services programming that can be supported through DOJ funding. Thank you for your consideration of this testimony. For more information, please contact TLPI Executive Director, Jerry Gardner at: jerry@tlpi.org.

PREPARED STATEMENT OF THE UNITED STATES SECTION OF THE PACIFIC SALMON
COMMISSION

NATIONAL MARINE FISHERIES SERVICE

Mr. Chairman, and Honorable Members of the Committee, I am W. Ron Allen, the Alternate 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 northern Olympic Peninsula of Washington State. The U.S. Section prepares annual budgets for the implementation of the Pacific Salmon Treaty.

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. Funding in the Department of Commerce budget intended for the programs to fulfill national commitments created by the Treaty was \$13,113,113 in the 2017 budget. The U.S. and Canada completed negotiations of revised Annex Chapters to the Treaty in 2018. The U.S. Section estimates that annual operational costs of \$42,260,604 plus \$53,561,341 in one-time implementation costs is needed for fiscal year 2020 to implement national commitments created by the Treaty.

The implementation of the Treaty is funded through the Departments of Commerce, Interior and State. The Department of Commerce principally funds programs conducted by the States of Washington, Oregon, Idaho and Alaska and the National Marine Fisheries Service. The cost of programs conducted by the States to fulfill national commitments created by the Treaty are substantially greater than the funding provided in the NMFS budget in past years. 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.

The US Section recommends that the Pacific Salmon Treaty line item in the Salmon Management Activities section of the National Marine Fisheries Service budget be funded at \$42,260,604 for fiscal year 2020. This line item includes \$20,698,063 to provide base support for the States of Alaska, Washington, Oregon, and Idaho. The National Marine Fisheries Service is funded at \$5,803,190 to conduct salmon stock assessments and fishery management programs required to implement the Treaty's conservation and allocation provisions for Coho, Sockeye, Chinook, Chum, and Pink salmon fisheries. 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 US Section recommends annual operational costs of \$2,800,000 for improving the Coded Wire Tag Program, \$3,920,000 to improve catch and escapement estimates, \$5,387,200 for Puget Sound critical stocks, and \$5,600,000 to increase prey availability for southern resident killer whales.

The Chinook Salmon Agreement line item in the Salmon Management Activities was funded at \$1,440,947 in fiscal year 2017 representing a reduction from previous years. The US Section recommends to fund \$2,016,000 to support 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 \$367,000 and provides the U.S. contribution to bilateral cooperative salmon enhancement on the transboundary river systems, which rise 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 had been previously funded at \$400,000 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 National Marine Fisheries Service 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.

Like many other programs, funding to implement the Pacific Salmon Treaty decreased in recent years. Prior to that, 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.

Negotiations to revise the provisions of five annex chapters to the Treaty were successfully completed in 2018. The revised provisions will last for 10 years. These chapters contain the specifics for implementing the Treaty for each salmon species in each geographic area. An agreement in principle has been reached for the Transboundary, Coho, and Chum chapters. Agreements for the Northern Boundary and Chinook chapters should be reached in the near future. 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. The provisions for a revised Fraser River chapter will be completed in 2019.

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 Indian people. 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, we can continue to utilize the Pacific Salmon Commission to develop recommendations that help with the development and implementation of solutions to minimizing impacts on listed stocks. We 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

Chairman Moran, Ranking Member Shaheen, and Members of the subcommittee, the Western Governors' Association (WGA) appreciates the opportunity to comment 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 19 western States and 3 U.S. territories in the Pacific. 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 funding of the National Integrated Drought Information System (NIDIS) program under the National Oceanic and Atmospheric Administration (NOAA). We are well-acquainted with the significant environmental, economic, and social effects of drought on the West and its communities. The cyclical nature of drought conditions, as well as increased populations and their dependence on limited water resources, keep drought at the forefront of western water issues. 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 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 which provides 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, we regard 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 in order to make informed decisions and implement effective mitigation measures. For these reasons, Western Governors request continued support and adequate funding of the National Weather Service Climate Prediction Center precipitation forecasts and the NIDIS program, as they perform a valuable role in western water management and drought response.

Western Governors also support adequate funding for the National Telecommunications and Information Administration (NTIA) to improve the accuracy and granularity of measuring broadband data coverage. Many western communities lack access to broadband Internet due to the high cost of infrastructure and the low number of customers 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. Deployment of broadband infrastructure to these underserved and unserved communities requires an accurate picture of broadband availability nationwide. Unfortunately, broadband coverage is often overstated in rural western communities due to reporting measures based on census blocks. NTIA can provide a valuable service by improving our understanding of

broadband infrastructure in rural communities. We also encourage 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 in discharging these critical and challenging responsibilities.

[This statement was submitted by James D. Ogsbury, Executive Director.]

PREPARED STATEMENT OF THE YMCA OF THE USA

SUPPORT OF THE YOUTH MENTORING GRANT

Thank you, Chairman Moran and Ranking Member Shaheen, for the opportunity to provide testimony on behalf of our Nation's 2,700 YMCAs and the 9 million youth we serve annually. Every day, Ys work to address critical social issues that affect our Nation's youth and limit their opportunities for success, and providing youth with positive role models and caring adults is essential to this work. That is why the Y is committed to mentoring. As President and CEO of YMCA of the USA (Y-USA), I believe that youth mentoring is an effective strategy to improve the long-term outcomes for our Nation's youth, and I submit this testimony in support of the Youth Mentoring Program (Part G), administered by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) at the U.S. Department of Justice (DOJ).

The OJJDP Youth Mentoring Program is the only remaining Federal grant exclusively dedicated to mentoring. This important funding stream provides grants to youth-serving organizations to fund quality mentoring programs, grounded in evidence-based research, to improve outcomes for at-risk and high-risk youth. Federal investments in mentoring programs have decreased significantly over time, and funding for the Youth Mentoring Program has been inconsistent and has not fully met the needs of at-risk youth. These fluctuations have had a direct impact on youth-serving organizations that use these funds to provide much-needed mentoring services in the communities they serve. I encourage the Committee to support increased funding for this program by providing \$120 million for fiscal year 2020.

MENTORING PROGRAMS IMPROVE YOUTH OUTCOMES

There are significant returns on investment associated with quality mentoring relationships, not just for the youth served, but also their mentors and society at large. With a mentor, at-risk youth are 52 percent less likely than their peers to skip a day of school, 55 percent more likely to be enrolled in college and 78 percent more likely to volunteer regularly in their communities. Community-based mentoring programs are also an effective strategy to prevent youth involvement in the juvenile justice system and to redirect a young person away from harmful activities and behaviors. Given these outcomes, it's disheartening to know that an estimated 1 in 3 young people will grow up without a mentor.

At the Y, we believe that all kids deserve the opportunity to discover who they are and what they can achieve. Mentoring is, and always has been, a component of our youth development programming. Through mentoring, Ys provide youth with positive adult role models who support young people through their challenges and accomplishments; show them that they matter; and improve their self-esteem, decisionmaking skills, academic performance and interpersonal relationships. Quality mentoring programs help youth develop life and social skills, improve their academic achievement, develop leadership skills, explore career paths and realize their full potential.

EVIDENCE-BASED MENTORING AT THE YMCA

With support from OJJDP's Youth Mentoring Program, the Y has been able to increase our impact in the lives of at-risk youth. Since 2013, Y-USA has received \$12 million from the Youth Mentoring Program, which we have sub-granted to YMCAs to support REACH & RISE®, the Y's evidence-based mentoring program. These funds have enabled the Y to scale REACH & RISE® nationally, serving thousands of young people who are at-risk of entering the juvenile justice system by helping them achieve positive academic and personal outcomes. Today, 36 Ys in 32 States offer this program. REACH & RISE® serves youth ages 6-17 who lack role models and live in communities challenged by poverty, crime, substance misuse, gangs, sin-

gle-parent households and other social issues. Developed in 1992 by the YMCA of San Francisco, REACH & RISE® is a therapeutic mentoring program that combines evidence-based practices, mental health approaches, rigorous mentor training and a mentee matching system to deliver positive life experiences for youth. Providing young people with positive, consistent and nurturing relationships with adults leads to personal growth and development, and social and economic opportunity.

The original REACH & RISE® model is a one-to-one mentoring program where Y staff with a mental health background match each youth with an adult for 12 to 18 months of mentoring. This experience improves youth's self-esteem, decision-making skills, school performance and interpersonal relationships. In 2016, the Y expanded our REACH & RISE® one-to-one model to also include small-group mentoring. Using a ratio of two mentors for every six youth, this approach provides youth with the opportunity to receive support from peers as well as dedicated mentors trained through the traditional REACH & RISE® curriculum. The group-mentoring program includes activities to help youth build trust with each other and skills such as problem-solving, communication and anger management.

THE IMPACT OF REACH & RISE®

Maverick Bishop is among the thousands of youth whose lives have been transformed by the OJJDP Youth Mentoring Program through REACH & RISE®. Maverick grew up in poverty, experiencing domestic violence and homelessness, and had a hard time fitting in at school. Eventually, he and his mother found the YMCA of San Francisco's REACH & RISE® program, where he was matched with a local businessman. He recalls that "having a good mentor helped me block out what I was going through on a day-to day-basis and just enjoy the little things that keep us going."

In 2016, Maverick testified before the House Democratic Steering and Policy Committee and shared his story. He concluded his testimony by stating: "Every child deserves an opportunity to better themselves and earn their place as a contributing member in our society. Through my journey I made lifelong friendships and learned no matter what situation you're in, regardless of your past or what class you fall under, it doesn't define who you are as a person. Anyone can change, beat the odds and manifest your own miracles! I hope the Committee will open doors for more young people like myself through continued funding for important mentoring programs like the YMCA REACH & RISE® Mentoring Program."

Today, Maverick is a journeyman carpenter, employed by his mentor and friend. Maverick's story demonstrates the power of quality mentoring and the importance of Federal funding in support of these programs.

With this testimony, I add the Y's voice in support of this important funding stream, which has changed the trajectory of the lives of so many youth we serve. The Youth Mentoring Grant Program is essential, and I urge Congress to increase funding for it. Thank you for this opportunity. I welcome any questions you may have.

[This statement was submitted by Kevin Washington, President and CEO.]