

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 2022

HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES ONE HUNDRED SEVENTEENTH CONGRESS FIRST SESSION

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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 2022

WEDNESDAY, FEBRUARY 24, 2021.

FUTURE DEFENSE SPENDING

WITNESSES

**MR. TODD HARRISON, DIRECTOR OF DEFENSE BUDGET ANALYSIS,
CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES**

DR. THOMAS G. MAHNKEN, PRESIDENT AND CEO, CENTER FOR STRATEGIC AND BUDGETARY ASSESSMENTS

**MS. ELIZABETH FIELD, DIRECTOR OF DEFENSE CAPABILITIES AND
MANAGEMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE**

OPENING STATEMENT OF CHAIR MCCOLLUM

Ms. McCOLLUM. Good morning.

This hearing is fully virtual, and so I am going to start out with a couple of housekeeping matters.

For today's meeting, the chair or the staff designated by the chair may mute participants' microphones when they are not under recognition for the purpose of eliminating background noise.

Members are responsible for muting and unmuting themselves. If you notice that you have not unmuted yourself when you are talking, I will ask you to do that. If you can, indicate that you need help by staff by just nodding. So if you want the staff to unmute you, just nod.

I remind all members and witnesses that there is a 5-minute clock and it still applies and it is located on the screen. And if there is a technology issue, we are going to move right to the next member until the issue is resolved. That member who was interrupted, we will keep track of your time and you will have your full time returned to you.

You will notice the clock on your screen and how much time is remaining. At 1 minute, the clock will turn yellow. At 30 seconds remaining, I will gently tap the gavel to remind members that their time has almost expired. And when your time is expired, the clock will turn red and I will start to recognize the other member.

In terms of speaking orders, we are going to follow the order set by the House rules, beginning with the chair and the ranking member. Then the members present at the time the hearing is called to order, they will be recognized in order of seniority. And, finally, members not present at the time of the hearing is called to order.

Finally, the rules of the House require me to remind you that we have set up an email address to which members can send anything

they wish to submit in writing to any of our hearings or markups. The email address has been provided in advance to your staff.

Now that I have got all the disclaimers out of the way, I welcome everyone to our first official committee activity of the year. So I am going to go right into my remarks and keep them a little brief here.

Because of the delay in the release of President Biden's fiscal 2022 budget, over the next few months we will be hearing from a diverse number of viewpoints on emerging threats, on regions that deserve more attention, and defense spending at large. The information will help us later this year when we analyze the budget request. This is the first of those hearings that we will hold to examine the larger issues impacting this subcommittee.

Today's hearing, we will focus on the possible future of defense spending. We will not only look at the direction the Pentagon may take us in the next 5 years, known as the Future Years Defense Program, but we also stand to benefit by thinking where we want to go, where we want to be in 10 or 20 years from now. And that way, when we write the 2022 Defense Appropriations Act, we will do so with medium and long-term goals in mind.

This is a new era for our committee. We have a new President in the White House and new leadership in the Department of Defense, and in Congress 64 percent of the Members of the House were elected after the Budget Control Act was enacted, something which I didn't vote for. And this will be the first time in 10 years we will be preparing a budget without the caps and the firewalls on defense and nondefense investment that the Budget Control placed on Congress.

So these hearings provide us a great opportunity to reassess what our future national security priorities are both on defense and nondefense side, because we know the investments on domestic priorities, like education and workforce development, directly impact America's national security and America's workforce.

How do we know to work with the Biden administration in a way that allows us to shape and be more diverse with the workforce in the Department of Defense that reflects our changing fabric of America? What kind of defense budget do we want to see, not only in fiscal year 2022, but how do we shape our national priorities 5 and 10 years out? And, yes, how do we take a hard look or even cut strategically unnecessary, outdated programs that just aren't working or just aren't necessary?

As appropriators who make critical decisions on where our tax dollars will be used, we have a responsibility to ask these questions. That is the work of this committee, and we will tackle it in the months ahead. I look forward to the contributions of every member on the subcommittee as we do that.

But today we have three witnesses. Elizabeth Field, Director of Defense Capabilities and Management at the U.S. Government Accountability Office. And we have Mr. Todd Harrison, Director of Defense Budget Analysis at the Center for Strategic Studies. And Mr. Thomas Mahnken, President and CEO of the Center for Strategic and Budgetary Assessments.

They are going to kind of set up where the Pentagon is at right now, today. And then we will have, as I said, future discussions on

where to go and ideas about what we can do differently in the future.

I welcome all the testifiers today.

But first I want to give a few minutes to my good friend and our ranking member, Chairman Calvert, for his opening statement.

Mr. Calvert.

OPENING REMARKS OF MR. CALVERT

Mr. CALVERT. Thank you.

And first I would like to start off by congratulating our new chair. Not only is she our new chair, she is a good friend and a trusted partner over the years. And I am looking forward to seeing what we all can accomplish in the subcommittee with her at the helm.

Next, I want to thank our witnesses for appearing before us today. Your input is invaluable as we consider the important topics in great detail.

This hearing today couldn't come at a more critical moment. As the 2018 National Defense Strategy tells us, we are in an era of great power competition, primarily with China, who is investing in military capabilities at an extremely alarming rate.

This competition is largely the lens through which the Department prioritizes its resources, and rightfully so. I believe without question that we should continue to prioritize key modernization and readiness efforts that equip and prepare us decisively to win a war against a peer adversary.

However, we as a Nation continue to ask more of our military than just preparing for this type of conflict. As we are winding down our troops in the Middle East, we are still engaged in counter-extremist operations, low-intensity conflicts around the world that require significant manpower and resources.

We are also in the age of rapidly evolving technology, like artificial intelligence, quantum computing, capabilities that will drastically change the nature of warfare in ways currently inconceivable to us. Developments in cyber warfare and space pose significant and expensive challenges to our Nation.

For years we have asked our military to do more and do it with less. While Congress has provided significant funding for the Department of Defense in recent years, it would be shortsighted of us not to recognize that budget instability and unpredictability is also a great threat to our military readiness and modernization efforts.

While I believe that most Members of Congress understand the important results yielded by current defense spending levels, I also know that many of my colleagues are seeking to significantly decrease defense spending.

Even with a flatline budget, we have to begin the hard work of aligning budget priorities with the realities of the future. This will mean divesting legacy systems, reforming the way that DOD does business, making significant reforms to both civilian and uniform personnel end strength, and preparing for the conflicts of the future.

I look forward to hearing from our experts on these issues and to begin the budget process for the upcoming fiscal year.

And again, Chair, I would like to thank you for bringing these witnesses before us today, and I will yield back the balance of my time.

Ms. McCOLLUM. I thank you very much, Ranking Member Calvert.

As of right now I am not seeing Chair Rosa DeLauro of the full committee or Ranking Member Kay Granger of the full committee, so we will get just right into testimony. And if they join us, we will give them the courtesy of making any statements.

So I am very happy to say that we are hearing first from Elizabeth Field from GAO.

Thank you, Ms. Field, for being with us. I found reading through the report a lot of questions that I now have for folks when they come into the office from the Pentagon, some good, hard ones.

So thank you for your testimony. Please begin.

SUMMARY STATEMENT OF MS. FIELD

Ms. FIELD. Thank you, Chair McCollum, Ranking Member Calvert, and members and staff of the subcommittee. I really appreciate this invitation, and it truly is an honor to testify before you on this important subject today.

Today's hearing comes at a time of significant challenge for our country. As you know, this week marked more than 500,000 Americans lost to COVID-19. This deadly pandemic has exacerbated what is already an unsustainable long-term fiscal path for our Nation, caused by an imbalance between revenue and spending.

As the single largest category of discretionary spending, the defense budget is likely to play a large role in any discussion of future Federal spending. These discussions will consider difficult questions about what our top priorities are for national security, what tradeoffs we can and are willing to make, and what our long-term vision is for defense spending.

It is not, of course, GAO's role to answer those policy questions. So I would like to focus my remarks this morning on a few key areas where we think DOD can and should improve its management of defense spending, regardless of where the defense top line lands in fiscal year 2022 and beyond.

First, DOD must improve its overall budgeting and execution of funds. Each year DOD allows billions of dollars appropriated by Congress to expire, and a lot of this funding ends up being canceled. Between fiscal year 2013 and 2018, DOD canceled more than \$81 billion, returning those funds to the general Treasury.

This problem indicates both that DOD needs to better estimate its annual budget requirements and ensure that it has better systems in place to use the funds it receives consistent with congressional direction.

Second, DOD must more clearly define its future resource requirements related to Overseas Contingency Operations, or OCO. In its fiscal year 2021 budget request, DOD estimated that \$48.5 billion of its \$69 billion request for OCO was for enduring or base requirements, and DOD's long-range forecasts reflect these enduring costs as part of the Department's base budget. However, we know very little about what makes up these enduring costs or how they were calculated.

Given the expiration of the 2011 budget caps, as you noted, Chair McCollum, and the changing nature of contingency operations around the world, it is imperative that the Department bring greater transparency to its use of these funds.

Third, DOD must continue efforts to reduce improper payments. When we have examined DOD programs vulnerable to improper payments, we have found substantial weaknesses that needed to be addressed.

For example, in 2018, GAO identified problems with how DOD was estimating improper payments in military pay, calling into question the accuracy of its assessment and its usefulness in developing corrective action plans.

DOD has since implemented all of the recommendations we made as a result of this review. However, in the last fiscal year alone, the Department estimated that it paid about \$11.4 billion in improper payments, indicating that this continues to be an area for improvement.

Strengthening the Department's overall financial management, an area that has been on GAO's high-risk list since 1995, would undoubtedly help with this problem. DOD is, as you know, the only major Federal agency that has been unable to receive a clean audit opinion on its financial statement.

Last but certainly not least, DOD must pay serious attention to strengthening and refining its Department-wide business reform efforts. For more than a decade, the Department has sought to find efficiencies. But many of these so-called reform initiatives have fallen short of expectations.

The most recent such initiative, Secretary Esper's zero-based review, did identify about \$37 billion in savings, and the fact that we could see those savings figures reflected in the Department's budget documents was notable progress.

But we also found that some of these savings were not really the result of reform. For example, some were the result of delayed contracts, costs that will still be realized in future years.

True business reform means fundamentally transforming the way the Department does business across the board, and it will take sustained senior leadership commitment. Given the recent elimination of the Chief Management Officer position at DOD, it remains to be seen how the Department will sustain recent progress in this area.

In sum, DOD has key opportunities to better execute the funds it has appropriated, to more reliably and transparently determine its resource needs, to safeguard funds from waste by reducing improper payments and strengthening financial management practices, and to maximize efficiency through meaningful business reform.

Taking these steps would give both DOD and Congress greater assurance that as strategic choices are made about tradeoffs and where to prioritize investments, those investments that are made will be put to best use.

Thank you again for this opportunity, and I look forward to your questions.

[The information follows:]

**Statement before the House Appropriations
Subcommittee on Defense**

Future Defense Spending

**A Testimony by:
Elizabeth A. Field
Director
Defense Capabilities and Management
United States Government Accountability Office**

Opening Statement:
February 24th Hearing on
Future Defense Spending

Chair McCollum, Ranking Member Calvert, and Members and staff of the subcommittee. Thank you for this invitation. It is truly an honor to testify before you on such an important topic.

Today's hearing comes at a time of significant challenge for our country. As you know, this week marked more than 500,000 Americans lost to COVID-19. This deadly pandemic has exacerbated what was already an unsustainable long-term fiscal path for our nation, caused by an imbalance between revenue and spending.

As the single largest category of discretionary spending, the defense budget is likely to play a large role in any discussion of future federal spending. These discussions will consider difficult questions about what our top priorities are for national security, what trade-offs we can and are willing to make, and what our long-term vision is for defense spending.

It is not, of course, GAO's role to answer those policy questions. So I would like to focus my remarks this morning on a few key areas where we think DOD can and should improve its management of defense spending, regardless of where the defense top line lands in fiscal year 2022 and beyond.

First, DOD must improve its overall budgeting and execution of funds. Each year, DOD allows billions of dollars appropriated by Congress to expire, and a lot of this funding ends up being canceled. Between fiscal year 2013 and 2018, DOD canceled more than \$81 billion, returning those funds to the General Treasury.

This problem indicates both that DOD needs to better estimate its annual budget requirements and ensure that it has better systems in place to use the funds it receives, consistent with Congressional direction.

Second, DOD must more clearly define its future resource requirements related to overseas contingency operations, or OCO. In its fiscal year 2021 budget request, DOD estimated that \$48.5 billion of its \$69 billion request for OCO was for enduring or base requirements, and DOD's long range forecasts reflect these enduring costs as part of the department's base budget. However, we know very little about what makes up these enduring costs or how they are calculated.

Given the expiration of the 2011 budget caps and the changing nature of contingency operations around the world, it is imperative that the department bring greater transparency to its use of these funds.

Third, DOD must continue efforts to reduce improper payments. When we have examined DOD programs vulnerable to improper payments, we have found substantial weaknesses that needed to be addressed.

For example, in 2018, GAO identified problems with how DOD was estimating improper payments in Military Pay, calling into question the accuracy of its estimate and its usefulness in developing corrective actions plans.

DOD has since implemented all of the recommendations we made as a result of these reviews. However, in the last fiscal year alone, the department estimated that it paid about \$11.4 billion in improper payments, indicating that this continues to be an area for improvement.

Strengthening the department's overall financial management, an area that has been on GAO's High Risk List since 1995, would undoubtedly help with this problem. DOD is, as you know, the only major federal agency that has been unable to receive a clean audit opinion on its financial statements.

Last, but certainly not least, DOD must pay serious attention to strengthening and refining its department-wide business reform efforts.

For more than a decade, the department has sought to find efficiencies, but many of these so-called reform initiatives have fallen short of expectations.

The most recent such initiative, Secretary Esper's Zero-Based Review, did identify about \$37 billion in savings, and the fact that we could see those savings figures reflected in the department's budget documents was notable progress. But we also found that some of these savings were not really the result of reform. For example, some were the result of delayed contracts — costs that will still be realized in future years.

True business reform means fundamentally transforming the way the department does business across the board, and it will take sustained senior leadership commitment. Given the recent elimination of the Chief Management Officer position at DOD, it remains to be seen how the department will sustain recent progress in this area.

In sum, DOD has key opportunities to better execute the funds it is appropriated, to more reliably and transparently determine its resource needs, to safeguard funds from waste by reducing improper payments and strengthening financial management practices, and to maximize efficiency through meaningful business reform.

Taking these steps would give both DOD and Congress greater assurance that, as strategic choices are made about trade-offs and where to prioritize investments, those investments that are made will be put to best use.

Thank you again for this opportunity, and I look forward to your questions.



United States Government Accountability Office

Testimony

Before the Subcommittee on Defense,
Committee on Appropriations, House of
Representatives

For Release on Delivery
Expected at 9:30 a.m. ET
Wednesday, February 24, 2021

DEFENSE BUDGET

Opportunities Exist to Improve DOD's Management of Defense Spending

Statement of Elizabeth A. Field, Director,
Defense Capabilities and Management



A Century of Non-Partisan Fact-Based Work

GAO 100 Highlights

Highlights of GAO-21-415T, a testimony before the Subcommittee on Defense, Committee on Appropriations, House of Representatives

Why GAO Did This Study

Decisions by DOD and Congress regarding long-term defense needs will have a meaningful impact on the nation's fiscal future. As the single largest category of discretionary spending, defense spending is likely to play a large role in any discussion of future federal spending. GAO and others have found that DOD faces challenges that are likely to put pressure on its budget moving forward. DOD is the only major federal agency that has been unable to receive a clean audit opinion on its financial statements.

This testimony provides information on how DOD can better manage defense spending, specifically related to its ability to (1) accurately estimate its budgetary requirements and execute its appropriated funds, (2) determine resource requirements related to overseas contingency operations, (3) reduce improper payments, and (4) sustain and refine department-wide reform efforts. For this testimony, GAO reviewed and summarized its recent work on DOD budget and financial management issues and departmental reform efforts.

What GAO Recommends

In prior work on which this testimony is based, GAO made recommendations that DOD take steps to better estimate its annual budget requirements and future fiscal needs for OCO, reduce improper payments, and refine and formalize its departmental reform efforts. DOD generally concurred with these recommendations and is working toward implementing them.

View GAO-21-415T. For more information, contact Elizabeth A. Field at (202) 612-2775 or efield1@gao.gov.

February 24, 2021

DEFENSE BUDGET

Opportunities Exist to Improve DOD's Management of Defense Spending

What GAO Found

GAO's previous work has shown that a number of opportunities exist for the Department of Defense (DOD) to strengthen management of defense spending, which would help the department address the challenges it faces, especially in a constrained budget environment. These opportunities include:

Improving budgeting execution of funds. DOD does not fully obligate the funds appropriated to it and can improve both its budgeting for and its use of the resources that are provided to it. For example, GAO found that DOD has left billions of dollars in appropriated amounts unspent over the past 10 fiscal years. Better estimating annual budget requirements and obligating appropriations provided by Congress within the period of availability established by Congress would help DOD minimize these cases of under-execution.

More clearly determining future resource requirements related to overseas contingency operations. DOD and Congress need a clearer determination of DOD's future resource requirements, in particular how and whether to incorporate enduring Overseas Contingency Operations (OCO) costs—costs that will endure beyond ongoing contingency operations—into DOD's base budget. These costs could total tens of billions of dollars a year. However, few details exist as to what makes up these enduring costs or how they were derived, raising questions about how much should be included as future requirements.

Reducing improper payments. Addressing improper payments—payments that should not have been made or were made in an incorrect amount—is an area where better financial management could save DOD billions of dollars. In its fiscal year 2020 agency financial report, DOD estimated that it paid about \$11.4 billion in improper payments, or about 1.7 percent of all payments it made that year. DOD has taken steps to reduce improper payments in some areas, but DOD's estimates of its improper payments in other areas indicate more remains to be done.

Sustaining and refining department-wide business reform efforts. DOD must transform its overall business operations so that it can more efficiently and effectively use its resources. In recent years, DOD reported notable achievements from its most recent department-wide business reform efforts, including \$37 billion in savings from fiscal years 2017 to 2021 as a result of these efforts. However, GAO previously found that while DOD's reported savings were largely reflected in its budget materials, the analyses underlying these estimates were not always well documented and the savings were not always the result of business reform.

Moreover, uncertainty about the leadership structure at DOD for overseeing and reforming business operations, including the recent elimination of the Chief Management Officer position, calls into question whether efforts to fundamentally transform how the department does business can be realized and sustained. GAO has previously highlighted the importance of DOD providing clear department-wide guidance on roles, responsibilities, authorities, and resources for business reform efforts will be necessary for DOD to make progress in these efforts.

Chair McCollum, Ranking Member Calvert, and Members of the Subcommittee:

Thank you for the opportunity to discuss the future of defense spending. Decisions by the Department of Defense (DOD) and Congress regarding long-term defense needs will have a meaningful impact on the path of federal spending and the nation's fiscal future. The nation faces serious economic, security, and social challenges that require Congress and the administration to make difficult, near-term policy choices in setting national priorities, including within national defense. These choices will influence the level and composition of federal spending and how the government obtains needed resources.

We have previously reported that the federal government faces an unsustainable long-term fiscal path caused by an imbalance between revenue and spending built into the structure of current law.¹ We have also reported that Congress and the administration have taken necessary actions to respond to the COVID-19 pandemic and the resulting severe economic downturn. Once public health goals have been attained and the economy has substantially recovered, Congress and the administration should swiftly implement a broad plan to address the long-term fiscal outlook. We have stated that a long-term fiscal plan is essential to ensure that the United States remains in a strong economic position to meet its security and social needs, as well as to preserve flexibility to respond to unforeseen events, including any future military conflicts or other national efforts the department may be called upon to support.²

As the single largest category of discretionary spending, defense spending is likely to play a large role in any discussion of future federal spending. Outlays for national defense were about \$714 billion in fiscal year 2020—representing about 44 percent of all discretionary outlays and about 11 percent of all federal outlays—and are expected to increase to \$733 billion in fiscal year 2021.³ We and others have found that DOD

¹GAO, *The Nation's Fiscal Health: A Long-Term Plan Is Needed for Fiscal Sustainability*, GAO-21-161T (Washington, D.C.: Oct 7, 2020).

²GAO, *The Nation's Fiscal Health: Action Is Needed to Address the Federal Government's Fiscal Future*, GAO-20-403SP (Washington, D.C.: Mar. 12, 2020).

³Congressional Budget Office, *The Budget and Economic Outlook: 2021 to 2031* (February 11, 2021). Total federal outlays include discretionary and mandatory outlays as well as net interest.

faces challenges that are likely to put pressure on its budget moving forward, including funding key departmental priorities, such as implementation of the National Defense Strategy (NDS), and addressing enduring costs related to overseas contingency operations.⁴

My testimony today provides information on how DOD can better manage defense spending in several areas. Specifically, I will summarize our prior work on how DOD can better manage defense spending, specifically related to its ability to (1) accurately estimate its budgetary requirements and execute appropriated funds; (2) determine resource requirements related to overseas contingency operations, (3) reduce improper payments, and (4) sustain and refine department-wide reform efforts.

We conducted the work on which this statement was based in accordance with all sections of GAO's Quality Assurance Framework that are relevant to our objectives. The framework requires that we plan and perform the engagement to obtain sufficient and appropriate evidence to meet our stated objectives and to discuss any limitations in our work. We believe that the information and data obtained, and the analysis conducted, provide a reasonable basis for any findings and conclusions in these products. More detailed information on the objectives, scope, and methodology for the work on which this statement is based is available in the issued reports cited throughout this statement.

⁴GAO, *Overseas Contingency Operations: Alternatives Identified to the Approach to Fund War-Related Activities*, GAO-19-211 (Washington, D.C.: Jan. 28, 2019); *Department of Defense: Actions Needed to Address Five Key Mission Challenges*, GAO-17-369 (Washington, D.C.: June 13, 2017); *Overseas Contingency Operations: OMB and DOD Should Revise the Criteria for Determining Eligible Costs and Identify the Costs Likely to Endure Long Term*, GAO-17-68 (Washington, D.C.: Jan. 18, 2017); and National Defense Strategy Commission, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (Nov. 14, 2018).

Opportunities Exist for DOD to Improve its Budgeting and Management of Funds, Determine Future Resource Requirements, Reduce Improper Payments, and Implement Department-wide Business Reform Efforts

Our previous work has shown that a number of opportunities exist for DOD to strengthen management of defense spending, which would help the department address the challenges it faces, especially in a constrained budget environment. Among these are (1) improving budgeting and execution of funds, (2) more clearly determining resource needs related to overseas contingency operations, (3) reducing improper payments, and (4) sustaining and refining department-wide reform efforts.

Improving budgeting and execution of funds. Our prior work has shown that DOD does not fully obligate its appropriated funds and can improve both its budgeting for and its use of these resources. For example, in reviews of the department's execution of operation and maintenance funds that we conduct each year as technical assistance for the congressional defense committees, we have found that that DOD reported leaving billions in operation and maintenance balances for fiscal years 2010 through 2014 unexpended and cancelled. In addition, DOD reported leaving billions in expired unobligated balances for fiscal years 2015 through 2019.⁵ Further, our reviews of military personnel appropriations have found that for the last 4 years of those appropriations' 6-year life cycle, hundreds of millions of dollars of unobligated and unexpended amounts remained in the accounts until cancellation.⁶

We have also found that DOD could potentially save hundreds of millions of dollars annually by developing and adopting a way for DOD depots to more reliably and consistently calculate allowable workload carryover.⁷ Each year, the military services order and fund billions of dollars of work from DOD's maintenance depots, some of which cannot be completed

⁵Unexpended balances are the total of obligated but unliquidated, and unobligated amounts. Time-limited appropriations, such as operation and maintenance amounts, expire at the end of the fiscal year for which they were appropriated and become unavailable for new obligations. Unexpended balances are available for 5 years after expiration for limited purposes, such as liquidating obligations incurred during the fiscal year of availability. After the 5-year period has elapsed, all obligated and unobligated balances are canceled, the expired account is closed, and all remaining funds are returned to the general fund of the Department of the Treasury.

⁶Pursuant to a provision in the conference report accompanying the fiscal year 2020 National Defense Authorization Act, GAO is currently examining the extent of canceled appropriations across federal agencies, including DOD; the factors contributing to cancellations; and efforts selected agencies make to manage these cancellations.

⁷See GAO, *2020 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Billions in Financial Benefits*, GAO-20-440SP (Washington, D.C.: May 19, 2020) and *Depot Maintenance: DOD Should Adopt a Metric that Provides Quality Information on Funded Unfinished Work*, GAO-19-452 (Washington, D.C.: July 26, 2019).

before the fiscal year ends. DOD allows depots to complete funded, unfinished work in the next fiscal year and refers to this as carryover. Depot carryover supports the smooth flow of work during the transition from one fiscal year to another. DOD reports that 6 months of carryover is optimal. However, we reported that for fiscal years 2007 through 2018, the Navy, Marine Corps, and Air Force depots averaged less than 6 months of carryover worth \$1.0 billion, \$0.2 billion, and \$1.9 billion, respectively, while Army depots averaged 10 months of carryover worth \$4.3 billion. Excess carryover may reflect an inefficient use of resources and tie up amounts that could be used for other priorities. We recommended that DOD develop and adopt a depot maintenance carryover metric that provides reliable, complete, consistent, and appropriate information. Taking this action could help the department reduce the risk of inefficient use of resources.

We have also made recommendations in the past related to better estimating the department's annual budget requirements. Doing so would help the department obligate its appropriations within the period of availability established by Congress and better position the department to minimize amounts that expire before they can be obligated.

DOD has identified opportunities to improve its budgeting and execution of funds and has made progress in doing so. For example, according to DOD, the Navy recently conducted reviews of programs that had been delayed due to cost, schedule, or performance issues and reduced funds allocated to these programs, allowing \$540 million in fiscal year 2021 to be redirected to other priorities.⁸

More clearly determining future resource requirements related to overseas contingency operations. DOD and Congress need a clearer determination of DOD's future resource requirements, in particular whether and how to incorporate enduring Overseas Contingency Operations (OCO) costs—costs that will endure beyond ongoing contingency operations—into DOD's base budget. In 2014 and 2017, we reported on DOD's enduring OCO costs and made recommendations to help DOD and Congress have a more complete picture of the department's future funding needs, including by developing guidance for transitioning enduring OCO costs to the base budget and estimating its

⁸Office of the Under Secretary of Defense (Comptroller), *Defense Budget Overview* (February 2020) (revised May 13, 2020).

enduring costs.⁹ Further, in January 2019, we reported on alternative approaches to funding war-related activities, including moving enduring costs to the base budget.¹⁰

Future requirements from enduring OCO costs could total tens of billions of dollars a year. For example, in its fiscal year 2021 budget request, DOD estimated that \$48.5 billion of its \$69.0 billion request for OCO, or 70 percent of its request, was for enduring or base requirements funded by OCO. DOD's longer-range forecasts for the defense budget include these enduring costs as part of DOD's base budget for fiscal years 2022 through 2025. However, few details exist as to what makes up these enduring costs or how they were derived, raising questions about how much should be included as future requirements.

Reducing improper payments. Addressing improper payments—payments that should not have been made or were made in an incorrect amount—is an area where better financial management could save DOD billions of dollars. In its fiscal year 2020 agency financial report, DOD estimated that it paid about \$11.4 billion in improper payments, or about 1.7 percent of all payments it made that year.¹¹

We have examined specific programs at DOD that are vulnerable to improper payments. For example, in August 2019, we reported on DOD's efforts to reduce improper travel payments, which represented \$549 million in payments in fiscal years 2017 and 2018.¹² We found several weaknesses to DOD's approach to reducing improper payments. For example, DOD had mechanisms to identify errors leading to improper travel payments, and some components had developed specific corrective plans to address the errors. However, we found that these efforts did not clearly identify the root causes of the errors, in part because there was no common understanding of what constitutes a root cause. We made five recommendations to strengthen DOD's efforts,

⁹GAO-17-68 and GAO, *Defense Headquarters: Guidance Needed to Transition U.S. Central Command's Cost to the Base Budget*, GAO-14-440 (Washington, D.C.: June 9, 2014).

¹⁰GAO-19-211.

¹¹DOD, *Agency Financial Report, Fiscal Year 2020* (Nov. 16, 2020).

¹²GAO, *Defense Travel: DOD Should Strengthen Its Ongoing Actions to Reduce Improper Travel Payments*, GAO-19-530 (Washington, D.C.: Aug. 15, 2019). DOD travel payments are made to active and reserve or guard servicemembers and civilian employees and cover travel for both temporary duty and permanent change of station.

which the department has since implemented. However, DOD's estimates of its improper payments in other areas indicate more remains to be done.

More broadly, we have reported that DOD financial management—its management of business systems and processes, internal controls, and financial reporting—continues to face significant challenges, including a decentralized environment; cultural resistance to change; lack of skilled financial management staff; ineffective processes, systems, and controls; incomplete corrective action plans; and the need for more effective monitoring and reporting.¹³ Sound financial management practices and reliable, useful, and timely financial and performance information would help ensure DOD's accountability over its extensive resources and more efficient management of its assets and budgets.

We reported in March 2019 and October 2020 that DOD's recent department-wide financial statement audits found numerous material weaknesses in internal control across the department, including examples of long-standing weaknesses that DOD has been unable to address, which contributed to disclaimers of opinion on the financial statements.¹⁴ However, there have also been signs of progress, including instances in the financial statement audit that have found opportunities to save resources and improve military readiness. For example, the Navy identified a warehouse that was not in its property records that contained approximately \$126 million in aircraft parts. The Navy was able to fill over \$20 million in open orders for these parts. By using these parts, aircraft were repaired quicker and made available for use, which improved military readiness.

Sustaining and refining department-wide business reform efforts. In addition to improving its budgeting and execution of funds and strengthening its financial management practices, DOD must transform its

¹³GAO, *High-Risk Series: Substantial Efforts Needed to Achieve Greater Progress on High-Risk Areas*, GAO-19-157SP (Washington, D.C.: Mar. 6, 2019).

¹⁴GAO, *DOD Financial Management: Continued Efforts Needed to Correct Material Weaknesses Identified in Financial Statement Audit*, GAO-21-157 (Washington, D.C.: Oct. 13, 2020) and GAO-19-157SP. A disclaimer of opinion arises when the auditor is unable to obtain sufficient, appropriate audit evidence to provide a basis for an audit, the auditor concludes that the possible effects on the financial statements of undetected misstatements, if any, could be both material and pervasive, and accordingly does not express an opinion on the financial statements. DOD is the only major federal agency that has been unable to receive a clean audit opinion on its financial statements.

overall business operations so that it can more efficiently and effectively use its resources. For more than a decade, we have reported on the department's business transformation efforts.¹⁵ However, many of the efforts have not met their intended goals. For example, we reported in July 2017 that DOD had not identified \$10 billion in cost savings for fiscal years 2015 through 2019, as directed by Congress, and did not have a reliable cost savings estimate to support the savings it had identified.¹⁶

In recent years, DOD reported notable achievements from its most recent department-wide business reform efforts. For example, in 2019, DOD conducted a Defense-Wide Review, led by the Secretary and Deputy Secretary of Defense, which assessed organizations within the Office of the Secretary of Defense and selected defense agencies and DOD field activities—including those that support the department's enterprise business operations—to improve the alignment of resources to National Defense Strategy priorities. The results of these reviews were incorporated into DOD's fiscal year 2021 budget request. The department reported \$37 billion in savings from fiscal years 2017 to 2021 as a result of this and other department-wide reform efforts.¹⁷

However, we reported in November 2020 that, while DOD's reported savings were largely reflected in its budget materials—an improvement from prior reform efforts we had reviewed—the underlying analyses were not always well documented and the savings were not always the result of business reform.¹⁸ For example, one reform initiative was based on the delay of military construction projects. According to DOD officials, this delay allowed them to fund higher priorities. If a delayed project is still planned, however, the costs will likely be realized in a future year and is not really a reflection of business process transformation. We recommended that the department establish formal processes to standardize the development and documentation of cost savings and

¹⁵We added DOD's overall approach to managing business transformation as a high-risk area in 2005 because DOD had not taken the necessary steps to achieve and sustain business reform on a broad, strategic, department-wide, and integrated basis. See GAO, *High Risk Series: An Update*, GAO-05-207 (Washington, D.C.: Jan. 1, 2005).

¹⁶GAO, *Defense Efficiency Initiatives: DOD Needs to Improve the Reliability of Cost Savings Estimates*, GAO-17-724 (Washington, D.C.: July 24, 2017).

¹⁷\$5.9 billion of the \$37 billion was attributed to the Defense-Wide Review.

¹⁸GAO, *Defense Reform: DOD Has Made Progress, but Needs to Further Refine and Formalize Its Reform Efforts*, GAO-21-74 (Washington, D.C.: Nov. 5, 2020).

ensure that reported savings are consistent with the department's definition of reform.

DOD concurred with our recommendations; however, uncertainty about the leadership structure at DOD for overseeing and reforming business operations calls into question whether efforts to fundamentally transform how the department does business can be realized and sustained. Most notably, the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 eliminated the position of Chief Management Officer, which functioned as the primary lead over DOD reform and efficiency efforts in recent years, with its responsibilities and resources transferred to one or more offices within DOD.¹⁹ In January 2021, the Deputy Secretary of Defense issued a memorandum that, among other things, provided an initial roadmap for dividing these responsibilities, but did not provide specific implementing guidance.²⁰ Future business transformation efforts could be impeded by uncertainty about how the offices that assume these responsibilities will function, including whether they have appropriate authorities and resources to lead the department's reform and efficiency efforts. We have previously noted that providing clear department-wide guidance on roles, responsibilities, authorities, and resources for business reform efforts is necessary for DOD to make progress in these efforts.

In conclusion, DOD faces challenges that are likely to put pressure on its budget moving forward and will heighten the debate over the future of defense spending. However, there are also numerous opportunities for the department to meet these challenges by improving its management of the resources available to it. I look forward to continuing to work with you and the department to help it address these challenges and make the most of these opportunities.

Chair McCollum, Ranking Member Calvert, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions you may have at this time.

¹⁹Pub. L. No 116-283, § 901 (2021).

²⁰Deputy Secretary of Defense Memorandum, *Disestablishment of the Chief Management Officer of the DoD and Realignment of Functions and Responsibilities* (Jan. 11, 2021).

Ms. McCOLLUM. Thank you. Thank you so much for that. And you made me make a whole list of questions to ask, as I said, when we move forward.

Next we are going to hear from Mr. Harrison.

And I really, in reading what you put forward, really the takeaway was how we are getting less for more.

So please address the committee. Thank you for being here.

SUMMARY STATEMENT OF MR. HARRISON

Mr. HARRISON. Thank you.

Chair McCollum, Ranking Member Calvert, and distinguished members of the subcommittee, I want to thank you for inviting me to testify today on the future of the defense budget.

But to understand what lies ahead for the Department of Defense, we must first look at how we got to where we are.

Adjusting for inflation, the defense budget today is higher than it was at the peak of the Reagan buildup in 1985, but the size of the force is smaller by nearly any measure. The number of aircraft in the Air Force inventory today is 43 percent less than in 1985, the number of the battle force ships in the Navy is 46 percent lower, and the Army total force is 33 percent smaller.

The trend is clear: We are spending more for less. The driving factors behind this trend are higher personnel costs and the steadily increasing costs of operating and maintaining our weapon systems.

From 2000 to 2012, the average cost per Active-Duty service-member grew at a compound annual rate of 3.6 percent above inflation, and that excludes war-related compensation costs.

Since 2012, the cost per person has held relatively steady thanks to reforms enacted by Congress to arrest the growth in healthcare, retirement, and other personnel costs.

We see similar trends in operation and maintenance. Excluding healthcare and war-related costs, the O&M cost per person in the military has grown at a compound annual rate of 2.6 percent above inflation all the way back since the end of World War II.

Over the past 20 years, the Air Force's O&M cost per plane grew by 157 percent above inflation. The Army's O&M cost per soldier grew by 117 percent. And the Navy's O&M cost per ship grew by 99 percent.

When the committee hears senior civilian and military leaders talking about the need for 3 to 5 percent real annual growth in the defense budget, these are some of the reasons why. A flat defense budget leads to difficult tradeoffs among readiness, force structure, and modernization.

But this is a false choice. We should not accept steadily growing O&M and personnel costs as a fact of life. It is an unsustainable trend that over time will lead to a progressively smaller and less capable force.

Increasing the defense budget without addressing this underlying trend merely delays the day of reckoning. We must attack the problem at its core, however painful and unpopular that may be.

While there is no one answer or magic bullet that can fix these problems that have been decades in the making, my recommenda-

tion is to focus on three priorities going forward that can bring us closer to the answers we need.

The first priority should be improving the way DOD measures and reports readiness. Despite previous attempts at reforming the readiness reporting system, the military continues to measure readiness primarily in terms of the resources applied—inputs—rather than the performance achieved—outputs.

DOD should instead develop performance-based readiness metrics derived from the existing mission-essential task lists for each different type of unit.

For its part, Congress should require DOD to submit more detailed budget justification documents for O&M accounts. The current O-1 documents do not provide sufficient detail to show operating costs by platform or unit type, and they do not include cost projections for future years. This lack of transparency limits effective oversight.

A second priority should be to conduct a strategically scoped roles and missions review. Without clearly assigned roles and missions, gaps in capabilities can emerge where no service claims responsibility and precious resources can be wasted on redundancies among the services.

This review should be narrowly focused on the gaps, overlaps, and areas of ambiguity that stem from the creation of the Space Force, advances in new technologies, changes in current military missions, and the emergence of new mission areas that are strategically important to DOD.

A third priority is to identify and build consensus around the crown jewels of the future force.

One of the key enablers needed to prevail in conflict over the next 5 to 10 years is the ability to share data fluidly across forces to provide a more complete picture of the battle space, what has become known as JADC2, Joint All-Domain Demand and Control.

The nodes and connectors of this network are critical to making it a reality, and this is where I believe the crown jewels of the future force can be found.

The future force requires stealthy long-range aircraft, resilient communication links, robust space defenses, highly proliferated constellations of satellites, long-range air and missile defense systems, and light-footprint ground forces that can operate within and on the edges of contested areas.

In conclusion, the budgetary and strategic challenges we face today are significant. But I remain optimistic, because the main obstacles to our success are within our control. Making the hard choices now will prevent us from having to make even harder choices in the future.

I thank you and look forward to your questions.

[The information follows:]

**Statement before the House Appropriations
Subcommittee on Defense**

“Future Defense Spending.”

A Testimony by:

Todd Harrison

Director, Defense Budget Analysis, Director, Aerospace Security Project
and Senior Fellow, International Security Program, CSIS

February 24, 2021

WebEx

Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the Subcommittee, thank you for inviting me to testify today on the future of the defense budget. To understand what lies ahead for the Department of Defense (DoD), we must first look at how we got to where we are. Since the end of World War II, the defense budget has risen and fallen in four complete cycles. In the cycles driven by the Korean War and the Vietnam War, the size of the budget and the size of the force scaled in rough proportion to one another. But after Vietnam, the budget and size of the force began to decouple. From 1979 through the peak in 1985, the defense budget grew by more than 60 percent, adjusting for inflation. But the size of the force, measured in the number of active-duty military personnel, grew by less than 9 percent.

The budget and size of the force became further decoupled in the most recent buildup that started just before 9/11. From the budgetary low of 1998 through the peak in 2010, the total defense budget grew by more than 110 percent, adjusting for inflation, or 62 percent if war-related funding is excluded. Yet the size of the force grew by just 4 percent. Of course, the number of active-duty military personnel is just one measure of the size of the force. But by nearly any other measure, the trends are similar.

In 2016, then candidate Trump called for significant increases in the military: a Navy of 350 ships, an active-duty Army of 540,000 soldiers, a Marine Corps of 36 active component infantry battalions, and an Air Force with 1,200 active component fighter aircraft. Congress passed two budget deals that allowed the defense budget to grow by 13 percent, adjusting for inflation, from 2016 through the high reached in 2019. Despite this increase and the Trump administration's desire for a larger force, the size of the military did not grow in proportion to the budget. Over that time, the number of ships in the Navy grew by 5.5 percent, the number of active-duty soldiers in the Army grew by 1.9 percent, the number of Marine Corps infantry battalions did not change, and the number of aircraft in the Air Force inventory fell by 0.1 percent.

Adjusting for inflation, the defense budget today is higher than it was at the peak of the Reagan buildup in 1985, but the size of the force is smaller by nearly any measure. The number of aircraft in the Air Force inventory today is 43 percent less than in 1985, the number of battle force ships in the Navy is 46 percent lower, and the Army total force is 33 percent smaller. The trend is clear: we are spending more for less. There are two questions we should ask ourselves: what is driving this trend, and is it sustainable over time?

Getting Less for More

In my research, I have looked in depth at the reasons behind the higher costs of a smaller force. It may be tempting to dismiss this trend as a consequence of our forces becoming more technologically sophisticated and capable—the “less is more” argument. This qualitative assertion is difficult to prove. While our military capabilities have certainly improved, one could argue that

our military has merely kept pace with the increasing threats we face. In some areas, such as space, missile defense, and cyber, I would argue that we have not kept pace with threats.

But looking at the budget data, the driving factors behind this trend of getting less for more are clear: our people are costing us more, and the cost of operating and maintaining our weapon systems is steadily increasing over time. A forthcoming report by my CSIS colleague Seamus Daniels notes that from 2000 to 2012, the average cost per active-duty service member grew at a compound annual rate of 3.6 percent above inflation, excluding war-related compensation costs. This figure includes healthcare, housing and subsistence, retirement accruals, and additional pay raises and benefits enacted by Congress. Since 2012, the cost per person has held relatively steady, thanks to reforms enacted by Congress to arrest the growth in healthcare, retirement, and other personnel costs.

We see similar trends in operation and maintenance (O&M) costs. Excluding healthcare and war-related O&M costs, the O&M cost per person in the military has grown at a compound annual rate of 2.6 percent above inflation since the end of World War II. Looking deeper into the data, we see that over the past 20 years, the Air Force's O&M cost per plane grew by 157 percent above inflation, the Army's O&M cost per soldier grew by 117 percent, and the Navy's O&M cost per ship grew by 99 percent.¹ There are many reasons behind the higher O&M costs per platform, such as the higher costs of maintaining older weapon systems and the higher operating costs of maintaining newer, more technologically complex weapon systems. A factor that should not be discounted is the high steady-state operational tempo demanded of forces by the combatant commands. Reductions in the size of the force serve to concentrate this demand on certain platforms and personnel, which stresses the force and ultimately drives up O&M and personnel costs.

When the Subcommittee hears senior civilian and military leaders talking about the need for 3 to 5 percent real annual growth in the defense budget, these are some of the reasons why. If O&M and personnel costs continue to grow faster than inflation, then a defense budget that is flat with inflation forces difficult tradeoffs among readiness, force structure, and modernization.

But this is a false choice. We should not accept steadily growing O&M and personnel costs as a fact of life. It is an unsustainable trend that over time will lead to a progressively smaller and less capable force that is unable to execute our national defense strategy. Increasing the defense budget without addressing this underlying trend merely delays the day of reckoning. We must attack the problem at its core, however painful and unpopular that may be.

¹ Todd Harrison and Seamus P. Daniels, *Analysis of the FY 2019 Defense Budget*, (Washington, DC: Center for Strategic and International Studies, September 2018), http://defense360.csis.org/wp-content/uploads/2018/09/180917_Harrison_DefenseBudget2019_WEB_FINAL_FINAL.pdf p 17.

There is no one answer or magic bullet that can fix these problems that have been decades in the making, and I do not pretend to have the solutions. My recommendation is to focus on three priorities going forward that can bring us closer to the answers we need.

Improve Readiness Metrics

The first priority should be improving the way DoD measures and reports readiness. Readiness is a term used to refer to a lot of things. A recent op-ed by Air Force Chief of Staff General Brown and Marine Corps Commandant General Berger raises the valid point that an excessive focus on near-term readiness (the preparedness of units to fight today) discounts the importance of long-term readiness (the preparedness of units to prevail in future battles).² But even the way we measure near-term readiness misses the mark by focusing on the availability of units rather than their capability.

Despite previous attempts at reforming the readiness reporting system, the military continues to measure readiness primarily in terms of the resources applied (inputs) rather than the performance achieved (outputs). The inputs certainly affect the outputs, but what is the relationship? If one cuts the flying hours of a squadron in half, does the average distance a bomb misses double? Is there a time lag between cuts in training and drops in performance? Could more skilled maintainers substitute for a shortage of spare parts? We cannot begin to unravel these important questions unless we are measuring both the inputs and the outputs of the readiness system.

DoD's current method for measuring and resourcing readiness leads to circular logic—a lower level of inputs (e.g., less funding for flying hours) becomes a justification for higher inputs (e.g., more funding for flying hours). Moreover, the system is predisposed to favor personnel and O&M accounts. Without proper readiness output metrics, we are operating with significant blind spots when resourcing readiness.

As I have previously written, DoD should develop strategy-based readiness metrics derived from the existing mission essential task lists for each unit.³ When doing this, it should be careful not to fall into the trap of attempting to aggregate these measures into a single readiness number or color coding for each unit. Just as you cannot assess a person's overall health in a single metric, such as temperature, blood pressure, weight, or cholesterol levels, you cannot assess military readiness in a single metric. It requires a basket of metrics that may be different for different types of units, and these measures should reflect both the long-term and near-term ability of forces to perform the missions and tasks assigned to them.

² Charles Brown, Jr. and David Berger, "To compete with China and Russia, the U.S. military must redefine 'readiness,'" Opinion Editorial, Washington Post, February 1, 2021.

³ See Todd Harrison, *Rethinking Readiness* (Washington, DC: Center for Strategic and Budgetary Assessments, August 2014), <https://csbaonline.org/research/publications/rethinking-readiness>.

For its part, Congress should require DoD to submit more detailed budget justification documents for O&M accounts. The current O-1 documents submitted by DoD do not provide sufficient detail to show operating costs by platform or unit type, and they do not include cost projections for future years. This lack of transparency limits effective oversight for important matters, such as the projected future costs of legacy weapon systems and force structure. However, requiring DoD to submit O&M justification books with more detail does not mean that Congress should limit DoD's flexibility to move money within and among O&M accounts. Insight and transparency are not the enemy of flexibility.

Rethink Roles and Missions

A second priority should be to conduct a strategically scoped roles and missions review.⁴ The allocation of roles and missions among the military services is necessary for effective strategy development and the efficient fielding of forces. Without clearly assigned roles and missions, gaps in capabilities can emerge where no service claims responsibility and precious resources can be wasted on redundancies among the services.

The Key West Agreement of 1948 that allocated roles and missions among the services was needed due to the confluence of three key changes at that time: the establishment of new organizations, advances in new technologies, and the creation of new military missions. Today we are at a similar inflection point with the establishment of the Space Force, rapid advances in new technologies from artificial intelligence to hypersonic weapons, and the creation of new military missions dictated by evolving threats and enabled by new technologies.

The default approach of the Defense Department is to do this in a piecemeal and reactive manner, attempting to resolve roles and missions issues individually as they become pressing problems and deferring decisions whenever possible. A more strategic approach, however, is to address questions about roles and missions in a more holistic way before they create problems. A strategically scoped roles and missions review should be narrowly focused on the gaps, overlaps, and areas of ambiguity among the services that stem specifically from the creation of the Space Force, advances in new technologies, changes in current military missions, and the emergence of new mission areas that are strategically important to DoD.

For example, the military needs to establish better boundaries to delineate the space capabilities and space operators that belong in the Space Force and the residual space expertise that should remain in the other services. Right now, DoD Directive 5100.01 lists the Army, Navy, Air Force, and Space Force as separate providers of space forces responsible for conducting space

⁴ See Todd Harrison, "Rethinking Military Roles and Missions in a New Administration," *Transition46 Series*, CSIS, <https://defense360.csis.org/rethinking-military-roles-and-missions-in-a-new-administration/>.

operations.⁵ This overlap will lead to redundancies and the inefficient use of resources—and the last thing Congress intended when creating the Space Force was to end up with four different space forces.

DoD should also consider other realignments, including moving the Air Force’s Intercontinental Ballistic Missiles (ICBMs) to the Army, as well as the security forces and helicopter squadrons that support the ICBM enterprise. The only other silo-based weapon system in the U.S. military is the Army’s Ground-based Midcourse Defense (GMD) system. Moreover, the Army already has forces that specialize in site security, and it operates a variety of helicopter units. Moving the ICBM enterprise to the Army would relieve the Air Force from having to maintain separate helicopter pilot training and maintenance lines, which could be folded into the larger Army rotary-wing aviation structure.

Joint All Domain Command and Control (JADC2) is an example where emerging technology, threats, and strategy have created a mission area that does not neatly fit into any one service. This leaves a gap where no service has the responsibility or authority to design the overall network architecture, protocols, and standards necessary for the level of interoperability the future force requires. Leaving the services to pursue their own approaches to JADC2 or engage in ad hoc partnerships is a recipe for failure. DoD needs to designate lead service for JADC2 if it is serious about building a truly joint architecture and achieving the operational benefits it can provide.

Identify Crown Jewels

A third priority is to identify and build consensus around the crown jewels of the future force. What we can learn from past downturns in the defense budget is that it is difficult to make significant changes in a short period of time. When I was at the Center for Strategic and Budgetary Assessments, we ran dozens of strategic choices exercises with a wide variety of groups to think about how to align the budget and strategy under various levels of constraints. One of my key takeaways from running these exercises is that developing a consensus around the top strategic priorities brings into focus all the other things that are (by definition) lower priorities. Rather than struggling to define what is legacy or not, we should be debating the priorities needed to execute the strategy.

The 2018 National Defense Strategy makes clear that competition with China and Russia is the top strategic priority. While the new administration may tweak the strategy to better emphasize the differences in how we compete with China and Russia, the overall focus is unlikely to change. One of the key enablers needed to prevail in this competition over the next five to ten years is the ability

⁵ Department of Defense, “Functions of the Department of Defense and Its Major Components,” DoD Directive 5100.01, updated September 17, 2020, <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/510001p.pdf?ver=2020-09-17-154337-967>.

to share data fluidly across forces on the ground, at sea, in the air, and in orbit to provide a more complete shared picture of the battlespace—what has become known as JADC2. Advances in data analytics and artificial intelligence will enable us to sort through massive amounts of data and identify patterns at speeds that are orders of magnitude beyond human capabilities. The battle network of the future needs to be nonlinear, meshed, and far more difficult for an adversary to disrupt or outpace.

The nodes and connectors of the network are critical to making this a reality, and this is where I believe the crown jewels of the future force can be found. The future force requires: stealthy, long-range aircraft that can penetrate contested airspace and hold targets at risk; resilient communication links that are more resistant to jamming and spoofing; robust space defenses that can protect our critical space assets from attack; highly proliferated constellations of satellites that provide tactical intelligence and surveillance over contested areas; long-range air and missile defense systems that can restrict adversary freedom of action; and special operations and light-footprint ground forces that can operate within contested areas.

In conclusion, the budgetary and strategic challenges we face today are significant. Finding solutions to bend the trends lines in our favor without breaking the force will require a concerted and coordinated effort in both Congress and DoD. But I remain optimistic because the main obstacles to our success are within our control: status quo thinking among strategists, cultural resistance to change within the military, and parochial political interests in Congress. Making the hard choices now will prevent us from having to make even harder choices in the future.

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In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

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Subcommittee: Defense ▼

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Future Defense Spending

Witness Name: Todd Harrison

Position/Title: Director, Defense Budget Analysis and Aerospace Security Project and Senior Fellow, CSIS

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Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

None.

Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

See attached.

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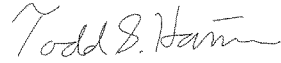
(i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

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(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

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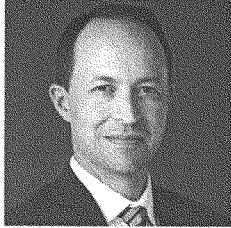
2/23/2021

Date

Appropriations



02/24/2021 — Future Defense Spending



Todd Harrison

Director, Defense Budget Analysis, Director, Aerospace Security Project and Senior Fellow, International Security Program, CSIS

Todd Harrison is the director of Defense Budget Analysis and director of the Aerospace Security Project at CSIS. As a senior fellow in the International Security Program, he leads the Center's efforts to provide in-depth, nonpartisan research and analysis of defense funding, space security, and air power issues. He has authored publications on trends in the defense budget, military space systems, threats to space systems, civil space exploration, defense acquisitions, military compensation and readiness, and military force structure, among other topics. He teaches classes on military space systems and the defense budget at the Johns Hopkins School of Advanced International Studies.

Mr. Harrison joined CSIS from the Center for Strategic and Budgetary Assessments, where he was a senior fellow for defense budget studies. He previously worked at Booz Allen Hamilton, where he consulted for the U.S. Air Force on satellite communications systems and supported a variety of other clients evaluating the performance of acquisition programs. Prior to Booz Allen, he worked for AeroAstro Inc. developing advanced space technologies and as a management consultant at Diamond Cluster International. Mr. Harrison served as a captain in the U.S. Air Force Reserves. He is a graduate of the Massachusetts Institute of Technology with both a B.S. and an M.S. in aeronautics and astronautics.

Ms. McCOLLUM. Thank you. Thank you very much.

And finally we are going to hear from Dr. Mahnken. And Dr. Mahnken has kind of worked out some scenarios for what may or may not be decisions the Pentagon would make with different budget scenarios.

Dr. Mahnken, welcome. Thank you.

SUMMARY STATEMENT OF MR. MAHNKEN

Mr. MAHNKEN. Chairwoman McCollum, Ranking Member Calvert, distinguished members of the committee, thank you for your invitation to appear before you today to discuss future defense spending.

Chairwoman McCollum, as you noted, my testimony today draws upon the results of a recent series of budgetary exercises that the Center for Strategic and Budgetary Assessments and the Ronald Reagan Institute organized with a really distinguished, bipartisan group of leading defense policy and budget experts in October 2020.

We gathered a group of current and former policymakers, current and former legislators, folks from industry, various perspectives.

And these sessions assessed the impact of fiscally constrained adjustments to U.S. defense strategy and military forces over the coming decade. And each team used our Strategic Choices Tool to implement changes in U.S. defense spending over the next 10 years.

And here I would particularly like to acknowledge Todd Harrison, who really developed the first iteration of the tool during his time at CSBA. We are now in the third iteration of that tool.

Essentially, what it does is it instantiates the Future Years Defense Program, the FYDP, over the next 5 years, and then a notional FYDP after that. So it allows users to make choices, the types of strategic choices that we are talking about, based on an overall level of budget. So you can add or subtract programs from the budget and see what the implications are.

Specifically, the teams were asked to use the tool to adjust U.S. defense spending under two distinct budget scenarios. The first was an immediate 10 percent cut to defense spending, followed by annual inflation increases. And the second was an annual 3 percent increase in defense spending, as called for by former Defense Secretary Mattis, former Chairman Dunford, and the congressionally mandated National Defense Strategy Commission.

I am going to focus on the former scenario, the budget cut, and just say briefly what we found.

In the 10 percent defense cut scenario, teams were required to cut \$444 billion in the first 5 years, the first FYDP, from fiscal year 2022 to fiscal year 2026, and \$200 billion more in the second 5 years, fiscal year 2027 to 2031, relative to the PB21 defense budget.

Now, this budgetary target forced participants to make some heroic political and strategic assumptions. For example, teams had to make large-scale cuts to personnel, force structure, and modernization.

Moreover, the force that remained after these cuts was incapable of carrying out the current National Defense Strategy. It lacked the ability to respond to the range of military contingencies that the

United States could reasonably expect to face and was too small and brittle to respond to unforeseen challenges.

Let me start with the areas that participants chose to invest in, even in this down-budget scenario.

Teams began by identifying their top strategic priorities, things that were must-haves and even needed to be plussed up.

These included nuclear modernization. Nearly all teams chose to preserve all elements of the nuclear triad.

Attack submarines was another area of emphasis. All teams chose either to maintain or increase the size of the attack submarine fleet, believing that these platforms are critical for operating forward in the face of increasingly capable adversaries.

All teams also emphasized unmanned assets, to include attritable systems. Participants believed that unmanned sea and air platforms should be procured in sufficient numbers for a protracted conflict against a capable adversary.

And then, finally, teams maximized the joint force's ability to deliver precise long-range fires from land, sea, and air.

So those were areas where the teams believed we needed to double down.

To generate the resources necessary for those priorities, teams made some difficult offsetting cuts, including to tactical fighter aircraft, aircraft carriers, ground force structure, and personnel.

All teams reduced heavily planned procurement of tactical aviation. Although most teams wanted to focus on legacy fourth-generation aircraft, they were ultimately forced to reduce fifth-generation aircraft to find needed cost savings.

All teams also chose to reduce the aircraft carrier fleet by 2, bringing the total down from 11 to 9 ships. Although partially driven by an effort to move towards a more distributed fleet, this was also a budget-driven decision to generate cost savings.

All teams also cut Army force structure, with average cuts of four Armored Brigade Combat Teams, six Infantry Brigade Combat Teams, and five Stryker Brigade Combat Teams.

And then, finally, teams made large reductions to civilian personnel and military end strength. Now, about half of these cuts were embedded in the divestment of platforms and force structure, but teams also made standalone cuts to personnel.

All teams cut the contractor and civilian workforce, resulting in reductions of approximately 10 percent and 30 percent, respectively.

So some pretty severe cuts, and the implications of those cuts were several. One of the most important was that a 10 percent budget cut would jeopardize the Defense Department's ability to maintain a force that can win one war while deterring another, which is really the basis of our current National Defense Strategy.

For example, the decision to cut force structure might lead the United States to emphasize one great power competitor over another, but with the conflict's outcome still highly uncertain. All teams chose to accept the greatest risk in Europe, while maintaining or expanding forward presence in the Pacific.

The United States would thus face the possibility of not merely having a one-war force, but a force designed for a particular geo-

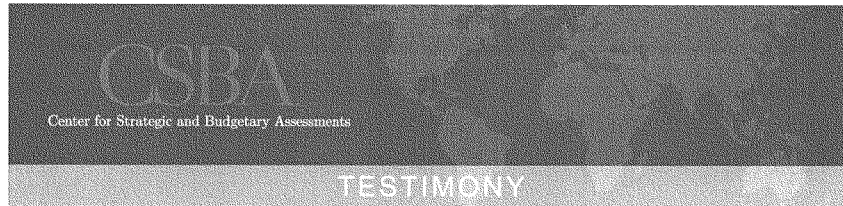
graphic region. And even there I think participants questioned our ability to prevail in some of the scenarios that we might encounter.

The cut would also force a real stark choice between force structure and modernization, would result in increased strain in the remaining force. And we also had concerns over the economic impact of these cuts on the defense industrial base and the broader national security innovation base.

I am happy to go into these results at greater depth. Also happy to talk about the alternative scenario, the increase scenario. But hopefully this has laid the table for a good discussion with the committee.

Thank you again for inviting me to testify, and I look forward to your questions.

[The information follows:]



**TESTIMONY BEFORE THE HOUSE APPROPRIATIONS
COMMITTEE DEFENSE SUBCOMMITTEE
HEARING ON FUTURE DEFENSE SPENDING**

February 24, 2021

**Thomas G. Mahnken, Ph.D.
President and CEO, Center for Strategic and Budgetary Assessments**

Chairman McCollum, Ranking Member Calvert, and distinguished members of the Committee: thank you for your invitation to appear before you today to discuss future defense spending.

We face increasingly difficult strategic choices in the decade ahead. Abroad, China and Russia continue to modernize their militaries and challenge U.S. leadership. At home, rising deficits and growing national debt, combined with economic challenges imposed by COVID-19 and the response to it, will place pressure on government spending in general, and the defense budget in particular. In upcoming spending debates, policymakers must understand the consequences that defense budget adjustments pose for U.S. strategy, force structure, and modernization.

My testimony today draws upon the results of a recent series of budgetary exercises that the Center for Strategic and Budgetary Assessments (CSBA) and the Ronald Reagan Institute (RRI) organized with bipartisan groups of leading defense policy and budget experts in October 2020. These sessions assessed the impact of fiscally constrained adjustments to U.S. defense strategy and military forces over the coming decade. Each team used CSBA's Strategic Choices Tool (SCT) to implement changes in U.S. defense spending over the Fiscal Year (FY) 2022 to FY2031 time period. CSBA's SCT is an interactive decision-making tool that allows participants to adjust U.S. modernization programs and force structure over a ten-year period within a given budget constraint. Within the tool, teams make choices over two five-year moves, essentially one Future Years Defense Program (FYDP) followed by a second FYDP. Rather than having to build a budget and military from the ground up, the existing Department of Defense (DoD) program of record for the next ten years is already built into the tool, so all decisions teams make are either additions or cuts to planned spending. Users choose to add or cut programs and force structure based

on their overarching strategy and concepts, while remaining within a given budget constraint.

Specifically, teams were asked to use the SCT to adjust U.S. defense spending under two distinct budget scenarios: 1) an immediate 10 percent cut to defense spending, followed by annual inflation increases; and 2) an annual 3 percent increase in defense spending.

Grappling with Strategic Choices Under a Severe Budget Cut

In the 10 percent defense budget cut scenario, teams were required to cut \$444 billion in Move 1 (FY2022-FY2026) and \$209 billion in Move 2 (FY2027-FY2031), compared to the forecasted PB21 defense budget. This budgetary target forced participants to make heroic political and strategic assumptions. For example, teams had to make large-scale cuts to personnel, force structure, and modernization that have heretofore proven to be politically unpalatable. Moreover, force that remained after these cuts was incapable of carrying out the current National Defense Strategy. It lacked the ability to respond to the range of military contingencies that the United States could reasonably expect to face and was too small and brittle to respond to unforeseen changes.

Priority Areas of Investment and Divestment

Teams began the exercise by identifying their top strategic priorities as well as the capabilities that need to be preserved or increased in order to execute their defense strategy. Most teams made the following major choices:

- *Nuclear Modernization:* Nearly all teams chose to preserve all elements of the nuclear triad (bombers, submarines, and land-based intercontinental ballistic missiles [ICBMs]). No team reduced the submarine leg of the triad.
- *Attack Submarines:* All teams chose either to maintain or increase the size of the attack submarine fleet. Participants believed these platforms are critical for operating forward in the face of increasingly capable anti-access/area denial (A2/AD) networks.
- *Attritable Assets:* All teams emphasized unmanned assets, to include attritable systems. Participants believed unmanned sea and air platforms should be procured in sufficient numbers for a protracted conflict against a capable adversary, to include the capability to field platforms rapidly as attrition mounts.
- *Long-Range Fires:* Teams maximized the joint force's ability to deliver precise long-range fires from land, air, and sea. With the U.S. withdrawal from the Intermediate-Range Nuclear Forces Treaty, teams developed conventional ground-launched ballistic and cruise missiles. They also procured long-range anti-ship missiles.

To generate the resources necessary for the above priorities, teams made several difficult offsetting cuts, including to tactical fighter aircraft (TACAIR), aircraft carriers, ground force

structure units, and personnel. All teams heavily reduced planned procurement of TACAIR. Although most teams wanted to focus cuts on legacy fourth-generation aircraft, they ultimately were forced to reduce fifth-generation aircraft to find needed cost savings. In both the near- and long-term, cuts to fifth-generation aircraft may inhibit the joint force's ability to defeat adversary A2/AD and gain air superiority in conflicts.

All teams also chose to reduce the aircraft carrier fleet by two, bringing the total down from eleven to nine ships. Although partly driven by an effort to move towards a more distributed fleet, this was also a budget-driven decision to generate cost savings. A decision to reduce carriers would limit the Navy's forward presence and carrier strike group rotations, requiring the Navy to rethink its model for projecting power.

All teams cut Army force structure, with average cuts of four Armored Brigade Combat Teams (BCTs), six Infantry BCTs, and five Stryker BCTs. This decision would reduce the Army's forward presence and diminish its ability to conduct large-scale, protracted operations.

Finally, teams made large reductions to civilian personnel and military end strength. Half of the personnel cuts were tied to divestments of platforms and force structure units, but teams also made standalone cuts to personnel. All teams cut the contractor and civilian workforce, resulting in reductions of approximately 10 percent and 30 percent, respectively. Although this decision was driven in part by the desire to rationalize the defense bureaucracy, these cuts primarily reflected the desire to find savings. If implemented in reality, the joint force would likely face large reductions in the support and expertise provided to warfighters.

Implications of a Severe Budget Cut

Risks to the Current and Future National Defense Strategy

One of the most important implications derived from this scenario is that a 10 percent budget cut would jeopardize the Defense Department's ability to maintain a force that can win one war while deterring another. For example, the decision to cut force structure might lead the United States to emphasize one great-power competitor over another, but with a conflict's outcome still highly uncertain. All teams chose to accept the greatest risk in Europe, while maintaining or expanding forward presence in the Pacific. The United States would thus face the possibility of not merely having a one-war force, but a force designed for a particular geographic region. Indeed, severe cuts to force structure made all teams question America's ability to win a war, let alone deter another. Participants believed that although the post-cut force would be capable of conducting short-duration, high-intensity operations, it would likely be inadequate to wage a protracted conflict. Moreover, if the United States were to become involved in a protracted conflict in a given theater, opportunistic adversaries elsewhere could be tempted to take advantage of the United States' preoccupation.

Force Structure versus Modernization

The need to balance force size with modernization is a perennial concern. Although teams preferred to make near-term force structure reductions to preserve modernization, the magnitude of the budget cut forced teams to reduce funding for modernization programs

even with sharp force structure divestments. The inability to sufficiently pursue modernization may risk the joint force's ability to field a modern force against increasingly capable adversaries. Divestments to TACAIR, large surface combatants, and Army ground units, without counterbalancing investments in modernization, could also cause allies and partners to doubt American capability or resolve against a great power competitor.

Conventional force structure reductions would also inhibit the joint force's ability to win future wars and would thereby increase U.S. reliance on nuclear deterrence. With fewer conventional rungs in the escalation ladder, the United States would have limited flexibility to manage crisis escalation. In a great power conflict, Washington could be pressed to consider nuclear use to preserve the geopolitical status quo. Conflict may become even more likely because adversaries could question whether such a U.S. posture is even credible.

Increased Strain on the Remaining Force

The above cuts to force structure, modernization, and personnel present several near- and long-term implications, including an increased reliance on the reserve component and a reduction in operational tempo (OPTEMPO). Despite an initial preference to cut active-duty units over reserve units, teams both cut the joint force's active-duty units by an average of 17 percent and reduced reserve personnel by an average of 25 percent. Coupled with reductions to the active-component, remaining reserve and guard forces would likely be under great strain to meet mission demands. Cuts to the active component would force a greater reliance on the reserves in the near-term, without the guarantee that the joint force can gain back active-duty personnel in the medium-term. Increased reliance on reserve and guard forces could result in overall slower mobilization times, as reserve units would require considerable training to become combat-ready for a potential conflict.

These force structure reductions would also force reexamination of current OPTEMPO levels. If the joint force reduces its force structure without reducing the frequency of military operations, the strain on forces and equipment will increase. The ability of the services to provide ready capability and personnel could be compromised if operational demands are not reduced commensurate with this smaller force.

Economic Impact on the Defense Industrial Base

A healthy and stable U.S. defense industrial base (DIB) – and, even more broadly, a vibrant national security innovation base – is essential to U.S. strategic success. To implement the budget cut, all teams chose to accept risk in the short-term and greatly reduce planned buys, hoping the joint force could recuperate in the medium-term by buying back divested platforms. But sudden reductions and work stoppages would contract the industrial base and essential talent would be lost to other industries. Cuts of this scale would diminish the DIB's ability to reconstitute the joint force during a protracted conflict against near-peers. Finally, severe reductions to procurement would produce large and politically challenging job losses.

Exploring Strategic Choices Under a Sustained Moderate Budget Increase

In contrast with the budget cut scenario, teams also considered the impact of an annual 3 percent increase in defense spending over the FY2022-FY2031 time period. This increase

reflects the level of resources that former Secretary of Defense Mattis, former Chairman of the Joint Chiefs of Staff Dunford, and the members of the congressionally-mandated National Defense Strategy Commission, of which I was a member, believe is required to fund fully the existing National Defense Strategy. In contrast with the severe budget cut scenario, teams were able to pursue modernization while maintaining force structure. Priority areas of investment for all teams involved air and sea platforms. Several teams also emphasized additional investment in research and development, munitions, and space, cyber, and communications capabilities.

Conclusion

The results of this exercise paint two starkly different pictures of U.S. defense spending and its strategic consequences over the next decade. In one scenario, the United States sharply reduced the military's size and curtailed its modernization, yielding a joint force that could, at best, win one war at a time. In the other, the military was able to maintain existing capabilities and make progress toward modernizing for the future. Policymakers must therefore carefully weigh downward pressure on defense spending. Sharp near-term spending cuts will likely curtail the joint force's ability to implement U.S. defense strategy, safeguard America's interests, and uphold the stable geopolitical balance of power the United States and its allies have enjoyed since 1945.

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 02/24/2021

Hearing Title :

Future Defense Spending

Witness Name: Thomas G. Mahnken

Position/Title: President and CEO, Center for Strategic and Budgetary Assessments

Witness Type: ☐ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☒ Self ☐ Organization

If you are representing an organization, please list what entity or entities you are representing:

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I am President and CEO of the Center for Strategic and Budgetary Assessments, a 501(c)3 think tank that studies defense policy and strategy, concepts, and capabilities, and budgets and resources.

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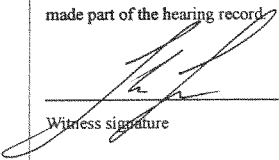
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False Statements Certification

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02/24/2021 — Future Defense Spending



Ms. MCCOLLUM. Great. Thank you.

I have got a couple of questions, but I am just going to ask one for now and save one for later so we can get around to other members. And this one is for Ms. Field.

OVERSEAS CONTINGENCY OPERATIONS

So you in your testimony talked quite a bit about, when I was reading through it, the Overseas Contingency Operations account there. And you talked about how DOD and Congress needs a clear determination of DOD's future resource requirements, especially how they are going to incorporate the enduring Overseas Contingency Operation.

When I was in the statehouse, we called those tails, you know. We always said, you know, this is how much it is going to cost. Now what are the tails?

So part of what you put out there are some scenarios of how to have more transparency. So lots of times, I think, when Members are voting on Overseas Contingency, they kind of tend to think of it as a 1-year account, a 1-year expense, and quite often sometimes it is. But other times it does have these enduring costs to it.

So with fiscal year 2020 and 2021, with base and OCO spending increased by \$2.5 billion, and just looking at the OCO part of it, what would be some of the things, if we are going to have real, clear accounting as we look to make cuts and changes in defense spending, for the committee tell a little bit some of the concerns that GAO was raising to the Pentagon so that there would be full transparency in the enduring costs or tails of the Overseas Contingency Fund.

Ms. FIELD. Sure. So there are a lot of really important issues there, and I think you hit on a lot of them.

I think fundamentally a concern that we had is transparency and what exactly the Department intends to use these funds for.

A few years ago we made a recommendation to the Department that they move enduring OCO costs into the base budget, and they have started doing that, which is, I think, positive because if there are costs that are expected to last for several years it would make sense that they would be in the base budget.

That said, when we look at the budget request and the justification for the budget, there is not a lot of detail in there about these funds. So a fundamental recommendation to the Department would be use this opportunity of the budget cap expiring to be more transparent and detailed about what these funds are going to be used for.

You noted—and I will just very briefly cover this—you noted that we have made or we have offered some options that are open not just to the Department, but to Congress, for ensuring better rigor in how the Department uses OCO funding. And I will just mention a couple of them.

One would be for Congress to use legally binding language in the annual appropriations act to very clearly specify the purposes for which the funds could be used. There is right now general language about how OCO funds can be used, but it is not legally binding and it is certainly not very specific.

Another would be to create separate appropriation accounts. Right now, even though they are called something different, they are put into the same account, which can make it hard to track them.

There are a lot of others issues here, but I will stop there, and hopefully that was an answer to your question.

Ms. MCCOLLUM. Well, thank you.

Gentlemen, to our other testifiers, I will save my—I have got a really good question for you, but I am going to, like I said, because other people are attending hearings and that, I am going to turn to Mr. Calvert for a question he might have.

CIVILIAN WORKFORCE

Mr. CALVERT. Well, those of you who know me probably know that the first thing I will delve into is cost figures.

Any time you have a large organization—and, of course, this is probably the largest enterprise that we are involved in, in the United States Government, is the Department of Defense—and obviously the biggest cost is personnel, both uniform and civilian.

And right now many of you already know that we have the highest ratio of civilian employees relative to uniform employees in the history of the Pentagon. And, obviously, that is not something that can be sustained, and I suspect that—I know a lot of thought has been put into this. But I think I will ask the question for the panel.

How do we bring the civilian workforce back into a ratio that has been historically what we have had? And by the way, I think it would actually create much more efficiencies within the Department if we could delve into that problem.

So I will just listen to the answers. Thank you.

Who would like to take it first?

Mr. HARRISON. I would be happy to jump in there first.

You know, I think you are right that we do need to take a very hard look at the size and scope and the use of the DOD civilian workforce. I would urge some caution, though.

First of all, if you look at the average cost per DOD civilian, it is actually lower than the average cost per Active-Duty military personnel. So we need to be careful in looking at are we eliminating civilian jobs and that work will then be done by a more expensive military person, because that is not going to save us money in the long run.

Also, we need to remember that about 95 percent of the DOD civilian workforce is outside of the Pentagon, outside of the DC area. Many of them are actually employed in the various government owned and operated depots around the country where they are performing essentially blue collar types of jobs.

Mr. CALVERT. If I could interrupt just for a second. I am not talking about depots. My friend, Mr. Cole, is probably listening to this and jumping out of his chair.

I am talking about primarily the middle management bureaucracy within the Department itself. And, by the way, not just through the Department of Defense, through the intelligence agencies and through the entire enterprise. And, it is fast. It is at the historic high.

And I understand the value of civilian employees. But how do we justify a ratio that is significantly higher than any time in the history of the Pentagon?

Mr. HARRISON. Well, I guess my point is that ratio, that it is at the highest level relative to the Active-Duty force, includes all of those blue collar, depot-related civilian workers, right?

If you are just looking at that middle management—and I agree with you—

Mr. CALVERT. Let's just take the depot out of this. But it is across—I am talking about across the enterprise.

Mr. HARRISON. Yeah, if you look at that middle management, it is actually a pretty small percentage of the overall DOD civilian workforce. And absolutely we should look at ways to reduce that. I don't think you are going to find the savings, though, the magnitude of the savings that we need to address a lot of our challenges going forward.

Mr. CALVERT. The civilian, the Business Board disagrees with you on that.

Mr. HARRISON. Well, if you are referring to the Defense Business Board report from I think it was about 5 or 6 years ago, if you look carefully at their methodology, what they did is they looked at all of the overhead-related functions in DOD, they summed up the dollar amount, and then they made a massive assumption.

They said that in the private sector they can generally trim about 5 percent from overhead functions, and then they applied that 5 percent to overhead functions at DOD. That is how they arrived at their \$25 billion-a-year savings estimate, \$125 billion over 5 years.

So they did not actually identify specific functions and specific DOD civilian offices and head counts that could be reduced. They just made a big assumption based on their experience doing similar things in the private sector.

Now, with that said, I think there are significant savings to be achieved—

Mr. CALVERT. I know my time has expired. But I know that a number of comptrollers in the Department of Defense that have been in the past disagree. They believe that the civilian workforce can be brought—you know, a cut of 5 percent, I am a business guy, that is a doable thing in a large organization.

So with that, Madam Chair, I will yield the balance of my time.

Ms. MCCOLLUM. To be continued, I am sure, Mr. Calvert.

And a lot of the folks that I found that were some of the civilian employees, when we started mobilizing for Afghanistan and Iraq were also dual-hatters, where they had a position where they also were in the Guard or the Reserve as well.

Mr. Ruppertsberger is having technical problems. We are trying to work those out. And hopefully he just might be—he is driving in and he is having problems with the video. And so we just might go to audio. But we are going to skip Mr. Ruppertsberger just for a minute now.

And so I am going to go to Mr. Kilmer, and then Mr. Rogers will be next.

Mr. Kilmer.

CLIMATE CHANGE RESILIENCE

Mr. KILMER. Thanks, Madam Chair.

For my first question, I was hoping to direct it to Mr. Harrison.

I keep thinking about that old FRAM oil filter commercial, "Pay Me Now or Pay Me Later." It seems like we have some issues related to the resiliency of some of our infrastructure that sort of fits that tagline.

I think about our Naval installations, including in my district, Naval Base Kitsap and Puget Sound Naval Shipyard in my district. They are already facing climate-related challenges, like sea level rise and coastal erosion and more frequent and severe storms that really threaten the safety of workers and, frankly, risk jeopardizing some of these critical defense assets.

The shipyard at Puget is the Navy's only dry dock on the West Coast that is capable of completing carrier repairs and retrofits, and it plays a very outsized role in supporting our Nation's defense posture in the Pacific.

So recognizing the threats that are facing not just the Puget Sound Naval Shipyard but the other public shipyards, the Navy released its Shipyard Infrastructure Optimization Plan, or SIOP, in 2018, which is a 20-year, \$21 billion effort to revitalize and modernize those shipyards to increase climate resilience and improve resistance to seismic events.

Personally, I think it is really important for Congress and the DOD to work together to keep SIOP on track to shore up that critical infrastructure, to address any deficiencies at the shipyards, to protect our defense posture in the face of any sort of unpredictable and, frankly, an evolving climate or we will pay later.

So my question, Mr. Harrison, as a budget analyst is, what do you recommend Congress can do to ensure that that Shipyard Infrastructure Optimization now Program and other similar resiliency plans can stay on track over not just the next 10-year trajectory but also the 20-year proposed plan?

Mr. HARRISON. Thank you, Representative Kilmer.

I think you raise an excellent point, and it is broader than just the Navy and the shipyards. Since the Budget Control Act was enacted and went into enforcement in 2013, the Department of Defense has repeatedly and consistently shortchanged funding for bases and maintenance and military construction, and we continue to see that in the fiscal year 2021 request that was released last year.

It is an easy piggy bank to go to, because you can rob some money from it now and promise to pay it back in the future. But as you note, the longer you delay the critical maintenance that is needed in a lot of these facilities, the more it will end up costing in the long run. This is something we need to look at Department-wide.

And I will raise an ugly word that the committee probably doesn't want to hear: BRAC, Base Realignment and Closure. That is something the Department has got to look at.

Now, if you look at the numbers produced by DOD, the Navy is not the service that is in need of a BRAC. It is primarily we see excess bases and facilities in the Air Force and in the Army.

And so I think that should be part of the next defense strategy, is taking a hard look at where can we consolidate, where can we close some of our bases and facilities to reduce the costs that we incur every year to maintain these facilities that we don't actually need and are not critical to our force, so that we can redirect those resources into more critical base maintenance and military construction activities that are needed.

Mr. KILMER. Thank you.

HEALTHCARE

With my remaining time, Ms. Field, I know that healthcare costs are a strain for the DOD just like they are a strain for everybody else. I have been hearing concerns from folks in my district that DOD health facilities in our neck of the woods won't have the capacity to treat retirees, both on TRICARE for Life and TRICARE Prime insurance plans, as part of the Military Health System reform due to a reduction in billets.

I am concerned about how staffing cuts, for example, again, in my neck of the woods at Bremerton Naval Hospital, at Madigan Army Medical Center, will impact access to care in the communities I represent.

In fact, over the past year Bremerton Naval Hospital reduced manning levels by about 100 personnel, with those Active-Duty billets being removed from Bremerton's manning document and those positions no longer being refilled when members retire or transfer or separate.

And that is not unique to Bremerton Naval Hospital. Those cuts are already impacting access to care for retirees who have dedicated their life to defending our country.

So my question is, what steps would you recommend to ensure that the Military Health System reform accomplishes its goals of streamlining the system and enhancing medical force readiness and providing access to quality care without sacrificing services to people who have earned those services?

Ms. FIELD. Thank you.

So my colleagues in the defense group have looked quite a lot at this issue of defense health reform, and as a result of some of their reviews I think there has been a bit of a pause in sort of how this reform is rolling out, and I think in large part because of some of the same concerns that you just identified.

My colleague, Brenda Farrell, and her team have an ongoing review right now looking more closely at military treatment facilities and what is going on with them. When that work comes out, I think they will have some particular recommendations focused on what you are interested in.

I am sorry that I don't have a more detailed answer for you right now. But, bottom line, I think your question is well-taken. The concerns are valid. And in general we would like to see the Department have a more clearly defined strategic plan, performance measures, ways to monitor how the reform effort is being rolled out.

I would also very quickly say in response to your question about climate resilience, we have, as you know, put the government's fis-

cal exposure due to climate change on our High-Risk List and DOD is a key player in that. Two things we have seen.

First, the Department has not necessarily clearly identified which of its installations and other parts of infrastructure across the different services are most at risk because of climate change. And so that would be an important place for them to start.

We have also found that the Department has not done mission assurance for commercial assets that have been deemed critical to determine what their vulnerability is to climate change.

So I just wanted to add that point very quickly.

Mr. KILMER. Thank you.

Thanks. I yield back, Madam Chair.

Ms. MCCOLLUM. Thank you, Mr. Kilmer.

I was with the Acting Secretary of the Army yesterday and healthcare came up. So we are going to take some time and do a deep dive on healthcare. And we will work with GAO and see if we can time it with the report, because sometimes they like to wait until they are done before they comment. But we will work with your office to make sure that that happens.

We are also going to be having in one of our future hearings discussions, food for thought, we are going to talk about climate change resiliency and energy use.

So all good things and things that we have to take in account when we are doing our budget.

Mr. Rogers.

CHINA

Mr. ROGERS. Congratulations to you, Madam Chair, for assumption of this heavy chore of leading this great subcommittee.

Let me talk to you about China, which is on everyone's mind these days.

In its first month, the Biden administration started a review of its strategy toward China. The Department has established a task force to provide a baseline assessment of its policies and programs related to China.

A lot of our defense spending obviously is to counter our adversaries' spending on programs. Consequently, we need to know what our near-peer China is doing in its defense policies and spending.

My question to any of the panelists. How do we know what China is spending on what we would call defense? I mean, they use PLA money for their trade policies, the Belt and Road Initiative, around the world, which indirectly, I suppose, could be considered defense. But in our definition of defense it would not qualify.

So how are we determining what China is actually spending on actual defense, what we would need to prepare to counter?

Mr. MAHNKEN. Congressman Rogers, I will take a first crack at that, because I think that is an excellent question.

In the U.S. case not all defense spending is in the defense budget, right? We have part of it in DOE with the nuclear budget, for example.

And if we think about China's spending on national security, the way they define it, I think actually a majority of their spending is not on the People's Liberation Army, but it is also—a majority of their spending is actually on internal security, organizations like

the People's Armed Police. Plus, I think, yeah, they have spending in various places.

So getting a good understanding of the Chinese defense budget is a real challenge. We actually have an effort ongoing right now to get a better understanding of that and to be able to look at the strategic choices that China may face, just as I briefed you on the U.S. side.

At one level, again, if you are talking about how much does it cost China to procure a fifth-generation aircraft, that is the type of thing that you can figure out, because we still in the 21st century pay for aircraft by the pound, we still pay for ships by the ton.

There may be some cost savings. There are definitely some cost savings through their theft of our intellectual property. But still there are things that they have to pay for.

And I would agree with you that getting a better understanding of their costs, what they are spending on, can give us a sense of what they value. Also, getting a better sense of what they are spending can go give us maybe some strategic options for dealing with them.

Mr. ROGERS. Well, I mean, the expenditures that they are using to fund their cybersecurity efforts against the U.S. and others, that is a huge problem for us and for the world and for the future of the economy of China and the U.S. And yet we don't have any idea, I don't think, of how much money they are actually spending trying to break through cyber matters.

What do you say to that?

Mr. MAHNKEN. I would agree. I think they—they are imposing lots of costs on us. We should be thinking about how we can impose costs on them.

You know, they are forcing us to do all sorts of things that are expensive and difficult, and they have over the years. We need to be thinking about how to do the same to them. Yeah, I would agree with you.

Mr. ROGERS. But at the moment they are cleaning our clock economically, militarily, socially. So I welcome the commission that the administration is establishing, focusing on the real big problems our country faces in the near future.

Madam Chair, thank you.

Ms. MCCOLLUM. Thank you.

Next, we have Mr. Cuellar.

RUSSIA AND CHINA INFLUENCE

Mr. CUELLAR. Chairwoman, thank you so much.

And to our witnesses, I want to thank you.

My issue has been how do we explain that the United States—and I am very supportive of the military—but how do we spend more money than China, Russia, and the other countries combined and it still seems like they, with less money than we spend—and I know a lot of it goes to our military benefits. I understand all of that. But my issue is we spend more money than they do, but they seem to be in more places than we are.

For example, one of the things that I am waiting for is I am waiting for an assessment that I added on the National Defense

Authorization to see what we are doing in Latin America. And I will be happy to share this with everybody later.

My concern is that, as we are looking at other places of the world, in our own backyard we have got—starting to get a heavy influence of Russians, but mainly Chinese.

For example, out of the 31 countries in Latin America, 25 host Chinese infrastructure projects, 56 port projects. Weapons that got sent have been sold. Seventeen out of the 31 countries in Latin America are part of the One Belt, One Road loans that China has provided since 2007, \$155 billion.

And then the same thing, you know, what they have done in Panama, they have done IT smart cities. They have done early warning radars. They have sent out their Peace Ark hospital ship.

In Argentina they have a space tracking station where they have about 99 percent access and the Argentinians don't have anything.

Mexico is buying a huge amount of vaccines from the Chinese and the Russians. You know, this is just right across the border itself.

So my question, as we look at the trends, is we are spending all this money on our military, combined more than the Chinese and the Russians and a couple of other countries, but they seem to be all over the world and especially in my—in our own backyard. I live on the border. So I told John Carter I don't just go visit there for a few hours. I live there every day. So I talk to folks that come in across the border.

How do we explain this as a trend, for any of the witnesses, Elizabeth, Tom, whoever wants to take this on, and especially what is happening in our own backyard? It is pretty scary, guys.

Mr. MAHNKEN. Well, Congressman, if I could lead off. I mean, I would agree with you. I was—now it is actually—it is going on a year and a half, I was in Bolivia, in Cochabamba. And just going through the airport in Bolivia, all of the scanning equipment, all of the security equipment was donated by the PRC, including facial recognition technology, all sorts of things like that.

I think the United States needs to be very active. We need to be active close to home and far from home.

Now, of course the military is just one instrument to do that. And, frankly, the U.S. Government and government assistance is only one set of instruments to do that. I think our strength as a Nation is not just with the government, but it is with private industry. We need to be working with private industry to build those ties.

I think where government can help is that a lot of places seek Chinese assistance because there is no strings attached. We need to stick with our principles.

Or I think also the more that the Chinese are out and about, the more resentment grows. I think America by and large has a good reputation overseas because we have ethics, we have laws, we stick to our laws.

And the complaints that I have heard in Central America, in particular in El Salvador, where the government shifted its recognition from Taiwan to the PRC, was a sense of betrayal on the part of a lot of Salvadoran businessmen who had spent a lot of time build-

ing relationships with businessmen on Taiwan and had basically been sold out by their government.

So we need to be able to provide support for those people.

Mr. CUELLAR. And thank you so much.

And let me just say thank you, my time is up, Chairwoman and Mr. Calvert and members.

Yeah, the assessment I called for was not only the military, but it also called the State Department, AID, and I even had a conference with the U.S. Chamber of Commerce that they are also worried about the Chinese coming in, into Latin America, because we as a country, we export about 40 percent of all of our exports go into Latin America but our attention is certainly not 40 percent to there. And even the private sector are seeing the Chinese.

So I am just asking the committee. I know this is only part. It still takes the other part, as you mentioned, Tom.

But we really need to start doing this because we are going to wake up like they did back in the 1980s where they said, "Oh, my God, look what has happened in Nicaragua. The Sandinistas have taken over." Sent Oliver North and da, da, da, all that.

We can't just wake up one day and find out that this presence of the Chinese and the Russians, especially the Chinese, are just right across the Rio Grande itself.

Ms. MCCOLLUM. Thank you.

Mr. CUELLAR. But, anyway, thank you so much. I appreciate it.

Ms. MCCOLLUM. Yes. You are welcome.

Judge Carter, welcome. And it is your turn to ask a question, please, sir.

Mr. CARTER. Thank you, and good to hear from you. Thank you. And congratulations. Well earned. We are looking forward to your leadership. And thank you very much for recognizing me.

In your testimony, Mr. Harrison, you state that the future force requires stealthy, long-range aircraft, resilient communication links, robust space defenses, highly proliferated constellations of satellites, long-range air and missile defense systems, and special operations and light-footprint ground forces.

Currently, the Army's six modernization priorities consist of, one, Long-Range Precision Fires; two, Next-Gen Combat Vehicles; three, future lifts; four, Army networks; five, Air Force missile defense; and, six, soldier lethality.

Now, is the U.S. Army on the right trajectory to seamlessly integrate into the Joint All Domain Command and Control—JADC2—framework as a result of the concerted efforts of initiatives filtered through the ArmyFutures Command? This command is my neighbor, and I take great interest in it.

Mr. HARRISON. Thank you, sir, for the question.

And, you know, I think that the Army's modernization priorities may be right for the Army. They are not necessarily the top priorities overall for the Department of Defense. And that is true for each of the services, quite frankly.

I think where the Army can play a big role in the future force, particularly looking at the challenges we face from China and operating in the Pacific region, is helping to develop longer-range air and missile defense systems.

I think that is an important role for the Army, the ground-based air and missile defense that can be deployed and can extend out coverage out over a much farther range than we are capable of doing today.

I think that that would be an important contribution to the future force. So that is why I consider it one of the crown jewels that should be protected.

In terms of the Army's ability to integrate with this larger battle network of the future that we are calling JADC2, Joint All Domain Command and Control, I think they are taking some initial steps with the Air Force now. They have a 2-year partnering agreement to explore how the network the Air Force is attempting to build can be integrated with the Army's future battle network.

But it is not enough. And that is one of the reasons I think we need a roles and missions review, is because this battle network of the future, JADC2, it falls into gaps among the services. And so we need a lead service designated to build that overall architecture for JADC2, the network protocols, the security standards, all of the details that everyone else can plug into.

If we don't do that, if we allow it to continue along this path where each service is doing their own thing and they may have ad hoc temporary partnerships along the way, we are not going to get to where we need to be. It is a recipe for failure.

So I would urge the committee and the Department of Defense to take a proactive look at this and assign a lead service for JADC2 and then set up a joint program office, a program executive agent for JADC2 that can coordinate all of those efforts and enforce the architecture, network requirements, and protocols across all the services to ensure we actually are able to integrate in the future.

Mr. MAHNKEN. Let me agree with Todd and just say that there are a whole series of areas, whether it is command and control, whether it is sensing, whether it is strike, whether it is logistics, that really are fundamental to modern warfare. And none of the services acting alone are going to be able to do what is needed. And so there really is some ownership needed in each of those areas.

And on issues like base defense, for example, defense of overseas bases or even domestic bases, there are gaps there. And so there needs to be much more of a joint effort to solve those problems.

Ms. FIELD. And if I could just—

Mr. CARTER. I agree with you, too, and that is one of my concerns, is that coordination has always been a concern, I think, with our military to some extent, going back as far as we can remember. And I thank you for the work you do.

Ms. MCCOLLUM. Ms. Field, you wanted to add something?

Mr. Carter, Ms. Field is going to add something to the mix, too, so we will give her a few seconds.

Mr. CARTER. Okay. Good.

Ms. FIELD. I will just be very quick. And I agree with Mr. Harrison and Mr. Mahnken that part of the issue here is the ability to rise up above the specific service level and look across the board.

And one of the things that GAO has been recommending to DOD is that it set readiness metrics for domains, not just individual services. That still hasn't happened, but that is a recommendation that is still on the books for us.

Mr. CARTER. Thank you.

Ms. MCCOLLUM. Thank you.

Mr. CARTER. Thank you. Madam Chair, I yield back.

Ms. MCCOLLUM. Oh, very good. And great question.

A-10

Mrs. KIRKPATRICK. Thank you, Madam Chair, for having this hearing.

And thank you to Ranking Member Calvert.

I really appreciate your interest in this.

I have two questions, one for Mr. Harrison and one for Ms. Field.

So I represent Davis-Monthan Air Force Base, which is home of the A-10 Warthog, which has been highlighted for divestment by the Air Force for many years as an offset for modernization efforts.

However, the A-10 is one the least expensive fighters to operate. Meanwhile, the cost of other fighters, with smaller fleet sizes, has been increasing.

I am concerned about the risk associated with divesting legacy systems that creates a capability gap while we wait for a new platform to become operational.

With regards to the A-10, we have not seen evidence that other platforms can perform the close air support and combat search and rescue mission as effectively.

So, Mr. Harrison, my question for you is, what recommendations do you have when it comes to balancing the need to modernize for a high-intensive conflict with the need for current or potential low-intensity conflicts?

Mr. HARRISON. Thank you, ma'am. That is great question. And it is one of those hard choices I talked about that we are going to have to make to prioritize the capabilities we need for the future force.

The A-10 has absolutely been a star of the Air Force for many decades. But we also need to look at how we conduct close air support today.

I think the burden here is actually on the Air Force to better demonstrate to Congress how that close air support mission that the A-10 is so adept at performing can and is being performed by other platforms.

And a lot of this is enabled by capabilities in terms of precision attack that did not exist at the time the A-10 was developed, things like drones, like the MQ-9 Reaper, that are able to loiter for long times and conduct very surgical strikes close in to our troops.

And even if you look at platforms like the B-1 Bomber have also been used for close air support because they now are equipped with GPS-guided weapons that are extremely accurate and so they can be used in this role.

The other factor we need to consider is that we have to make hard choices, we have to prioritize in our strategy between the capabilities that we need for high-end conflict, the capabilities that we need for gray zone competition with Russia and China, and the capabilities that we need for lower-end conflicts, counterterrorism, counterinsurgency operations.

And I think at the end of the day, you are right in your assessment that the A-10 on a per-plane basis is not that expensive compared to other crewed fighter aircraft. But when you compare it to the cost of operating drones, either a cost per tail per year or a cost per flying hour, it actually is still more expensive than the MQ-9 and the MQ-1s that can do many of the functions of the A-10.

So I think that the Air Force needs to present that analysis better to Congress. And I think Congress has got to accept that and understand that this may be one of the hard choices we have to make, is retiring the A-10 platform, because we do have other multipurpose platforms that can take its place.

Mrs. KIRKPATRICK. Well, I agree with you, it is going to be a really, really hard choice. We really depend on the A-10 in southern Arizona. So my district borders Mexico, and the A-10 can make these low-flying flights over the border to monitor what is going on. I just don't think there is any replacement for that right now.

I talked with the A-10 pilots, and they like the A-10. They feel like it is easy to fly, it is versatile, and it is going to be tough to convert to something else. I don't know if our pilots are ready to do that. But I think long-term that is something we have to do. So thank you very much.

DOD AND CLIMATE CHANGE

I would like to go to my second question, which is for Ms. Field.

In Arizona we are already experiencing the effect of climate change. The Department of Defense has acknowledged that climate change is a national security priority, and the changing environment will impact defense installations and our ability to project power.

So my question is, how do we incentivize a transition in the Department of Defense toward more sustainable environmental stewardship, to include energy consumption and requirements development?

Ms. FIELD. That is a great question, and I will be very brief.

A number of years ago we made a recommendation to the Department that each military service incorporate criteria in their process for racking and stacking new MilCon projects, to include criteria related to building resiliency to climate change.

We heard when we went down to the military service level that individuals were reluctant to bring forth MilCon projects that were related to building climate resilience because they didn't think that they would win out in the overall sort of racking and stacking of potential MilCon projects.

So that is one small way, but potentially meaningful way for the Department to incentivize the sort of behavior that you are talking about. We have a number of other related recommendations, but given the time, I will stop there.

Mrs. KIRKPATRICK. Thank you so much for your answer.

Madam Chair, I want to thank you for having this hearing and thank Ranking Member Calvert. I have another hearing I am going to have to jump on to.

Ms. MCCOLLUM. Okay.

Mrs. KIRKPATRICK. So I am going to excuse myself. Thank you very much. This has been very productive.

Ms. MCCOLLUM. Thank you.

Mr. Diaz-Balart.

Mr. DIAZ-BALART. Madam Chairwoman, can you hear me?

Ms. MCCOLLUM. Good morning.

Mr. DIAZ-BALART. Let me start by congratulating you, but also by thanking you. You have always been just amazingly accessible and easy to work with, and I just appreciate working with you.

A few questions. Let me go back to China.

CHINA RESEARCH AND DEVELOPMENT

So my understanding is that China has basically tripled their R&D spending in the last decade while, basically, our R&D remained pretty constant.

So how do we keep up with the Chinese threat, understanding where we have been going and where we may be going in R&D? I am not quite sure who wants to deal with that.

Mr. MAHNKEN. I will take a first stab at that.

Look, I think we do it by not trying to emulate the authoritarians and doing it in the way that China is doing it. We do it the way democracies do it.

So I think we do it by trying to lower the barriers between the tremendous innovation that is going on within our broader economy and within our broader society, and figuring out better ways to bring that in, more effective ways to bring that in to the service of national defense.

I think there is enormous innovation going on. There is a lot of very good. And government can play a role in terms of the demand signal for the particular areas that would most benefit defense. But I think there is a lot to be gained by lowering those, the barriers, to get things from outside of defense industry, outside of government in to serve our needs.

Mr. DIAZ-BALART. You know, it is interesting, I think you make a valid point. But we also know that China steals a lot of our intellectual property, right? And that is one of the challenges when we have an open society that does go to the private sector for a lot of R&D. And so that is also a bit of a CHEOPS.

Mr. MAHNKEN. Absolutely. And I think we need to play a strong defense on that front as well.

Mr. DIAZ-BALART. Let me go back very briefly—how much time do I have?—to Mr. Cuellar's point on Chinese involvement everywhere, including in this hemisphere.

So what strategic areas does the Chinese military, where do they pose strategically the greatest challenge, the greatest threat to the U.S., our interests, and our allies' interests, like Taiwan? And where is your biggest vulnerability when you are dealing with China now and in the near future?

CHINA AND SPACE

Mr. HARRISON. If I could jump in here.

I would actually say that one of our biggest vulnerabilities to China right now is in space, that we do have much better space capabilities than China, thanks in part to our robust commercial space industrial base.

But what we see is China is making large strategic investments in counterspace weapons. And they are making advances in counterspace weapons faster than we are advancing our space defenses against those systems.

And so we still have very large vulnerabilities in space I think are very concerning.

And just quickly, back to your earlier point about R&D spending. The research and development part of our defense budget is actually at a historic high right now. So I wouldn't discount it too much.

But our concerns are, what is the trajectory of the R&D budget in the future? And what are we doing to better leverage the commercial investments that are being made in R&D right now?

And in particular the DOD has got to figure out different paradigms for working with commercial industry to leverage all of the great R&D and intellectual capital that is being developed there. And in a lot of cases, that means we need to look at buying things as a service rather than a product.

And that is a big paradigm shift for DOD that is used to buying weapon systems and operating them itself. There are many cases where we can simply buy things as a service and leverage what the commercial marketplace is already doing.

Mr. DIAZ-BALART. Madam Chair, I have obviously a number of different further questions, but I see that my time is running short. And I will lead by example and actually give back a little bit of time. So I yield back. Thank you very much.

Ms. MCCOLLUM. Thank you. We might have an opportunity to do another round.

Mrs. Bustos, welcome.

DEFENSE MANUFACTURING

Mrs. BUSTOS. Thank you, Madam Chair. And really appreciate you and Ranking Member Calvert for holding this hearing today. Very, very important.

I think we can all agree that investment in the Nation's defense is absolutely critical to deterring future conflicts.

With that said, many on the committee have heard me talk about the Rock Island Arsenal in the past, I usually have some question that revolves around that, located literally on an island in the middle of the Mississippi River. I have already invited our new chair to come and visit, and I hope that we will be able to make that happen.

So the Rock Island Arsenal is home to the Army's Additive and Advanced Manufacturing Center of Excellence. We are very proud of that. They are on the cutting edge of 3D printing technology for future use, things like research and development work on the Next-Generation Combat Vehicle, while also building the vehicles and armament needed today.

Like every day, every workday there they are converting Humvee chassis to ambulances. They are now converting those Humvee chassis to make shop equipment vehicles.

And so I share this to say that the district that I represent is an example of the larger defense investment discussion, the fact

that we need to smartly balance investment in future needs and technology with modernization of the existing force.

So that leads into the question that I would like to ask, and I will direct this to any and/or all of the witnesses that we have today, whoever would like to take this.

But I would like to get your thoughts on the importance of advanced and additive manufacturing to the future of defense spending.

As you all already acknowledged, and as we know, the National Defense Strategy places tremendous emphasis on the use of disruptive technologies to counter threats from near-peer competitors.

So just a little bit deeper here. So additive and advanced manufacturing is such a disruptive technology that it has the potential to significantly change how we address supply chain issues, completely rethinking how we develop certain weapon systems, while saving significant funding.

So I am wondering if, similar to the creation of the Joint Artificial Intelligence Center, it would make sense to create an office to better coordinate advanced manufacturing activities across DOD. Your thoughts on that.

Again, any and/or all of the panelists can answer that, please.

Mr. MAHNKEN. I will take a first stab at it, which is, look, I think it is a great idea. I think if we look at future concepts, combat concepts, warfare concepts that the services are developing, Joint Staff is developing, they place that premium on mobility and agility, right? And having the ability to do additive manufacturing, advanced manufacturing forward, and to be able to serve the needs of forces, I think is going to be a critical capability.

We are still in the 21st century. We are slowed down by the need to haul food, water, supplies, and power. Well, the water and food you are not going to get away from as human beings.

But the ability to lighten the logistical load, and through things like advanced manufacturing, I think is a real promising area. It is one of the reasons why I think the logistical piece of warfare needs to get a greater attention and really does need to have high-level advocacy and sponsorship.

Mrs. BUSTOS. I am glad to hear you say that.

Please.

Mr. HARRISON. I would jump in and add to that. I think additive manufacturing has a lot of potential to help with military readiness.

And being able to print specialized tools in the field that you may not want to have to carry with you because they are rarely needed, and in some cases being able to print specialized replacement parts, spare parts, that you would not want to have to carry with you, that can be very valuable going forward.

And so that is something that is definitely worth exploring and looking at investments in.

I also would not want to discount the role of the private sector here in leading the charge for additive manufacturing.

I have looked at a lot of companies that are figuring out ways that they can build parts and components that go into everything from rocket engines to jet engines to you name it, things that they literally could not build without additive manufacturing, that are

greatly improving the performance, the reliability of the systems they are building.

So there is a lot of work going on here in the private sector we should not discount.

Mrs. BUSTOS. Thank you.

Ma'am, is there anything else you would like to add with 13 seconds left?

Ms. FIELD. No, thank you. I have nothing to add on this particular topic.

Mrs. BUSTOS. Okay. Thanks very much.

Madam Chair, I yield back.

Ms. MCCOLLUM. Thank you.

Mr. Crist, you are next.

MISSILE DEFENSE AND HYPERSONICS

Mr. CRIST. Great. Thank you, Madam Chair. And thank you so much for holding this hearing.

And I appreciate you, Ranking Member Calvert, as well.

I think I want to direct it to Mr. Harrison.

You were talking about earlier the notion of getting less while paying more. And I think at the conclusion of your presentation you talked about the fact that this deals to some extent missile defense.

And one of the concerns I have had, and I think several members of the subcommittee, obviously, as well, deals with the hypersonics.

And so my concern about that is if we are paying more for getting a sufficient defense, if you could elaborate on that or give us some insight. It is of grave concern to me, just what I know about it from prior meetings that we have discussed this topic and it seems like a vulnerability to me, frankly.

And if you can assuage that in my mind, that would be delightful. But I am just searching for the truth and what the facts may be. If you can be helpful that way, that would be wonderful. I appreciate it.

Mr. HARRISON. Sure. I will lead this off here.

I think that I outlined in my testimony I think one of the crown jewels of the force in the future is actually air and missile defense systems.

But you are right that the way that we have proceeded in this area to date has been very costly, it has been very expensive. The technology is expensive to develop.

And particularly if you look at the cost-exchange ratio, how much it costs an adversary like China to build a ballistic missile or a cruise missile or even a hypersonic weapon versus how much it costs for us to defend against that capability, which may require multiple interceptors being fired to achieve a sufficient probability of intercept, it is prohibitive, and it does not scale in our favor.

So I think that should be one of the focus areas in our integrated air and missile defense systems, is how do we change that cost-exchange ratio so that it is more affordable to field missile defense systems that are sufficiently scalable to counter the threats that we face from adversaries?

So I think we should prioritize those investments, in particular looking at things like directed energy systems.

There is still a long road ahead. The technology is not there today. Let's be honest. It is not quite there.

We have got to continue investments in directed energy systems, particularly things like electric lasers, solid state lasers that can achieve higher power levels to intercept incoming warheads and missiles and munitions of various types in a more affordable and scalable manner.

Mr. CRIST. Thank you for that. But to follow up, I think that if we don't have the technologies and other countries apparently do, where is the deficiency? Where does it lie? Is it just a matter of additional funding in order to achieve the technological know-how in order to protect America? Or is there something else at work here that we should be aware of?

Mr. HARRISON. I think it is a combination of both time and funding. Our adversaries don't have missile defenses that are any better than ours. In fact, we are pretty far ahead when it comes to missile defense.

Where they are making advances is in their missile technology that can threaten us. And that is our concern. You know, if they are building hypersonic weapons, it doesn't mean that we need hypersonic weapons. It means we need defenses against hypersonic weapons, right?

So this is an asymmetric competition here.

Mr. CRIST. If I might, Mr. Harrison. Maybe it is both. Maybe as a deterrent we should have the hypersonics available to us, in addition to better defenses, of course. I couldn't agree with you more on that point.

But I would like to be able to have the ability to strike, which in many instances gives the adversaries the reticence to strike us, because we can do what they can do and so they don't want to do it at all, and neither do we.

Mr. HARRISON. And where you can achieve symmetry and mutual vulnerability, if you will, then, yes, those can be a very effective deterrent.

I am looking at more of the asymmetric situations where they can pose more of a threat to us with their missile forces than we could actually pose to them. And so that is where we need to be looking at better defenses.

And to your earlier question, I think it takes both more funding and more time. We need both. This is not something where you can leap ahead in technology. You actually have to do the hard work of developing and maturing that technology over time.

Mr. CRIST. It sounds like we ought to do it.

I yield back, Madam Chair. Thank you so much.

Ms. MCCOLLUM. Thank you.

Mr. CALVERT. Madam Chair, this is Ken Calvert.

Ms. MCCOLLUM. Yes.

Mr. CALVERT. I have a hard stop at 11. I had a commitment I couldn't—it went a little longer than I thought. So I apologize. It won't happen in the future. But I have got to move on. So I will touch base with you later and see what happens.

Ms. MCCOLLUM. Absolutely. So you are putting Judge Carter in charge?

Mr. CALVERT. Yeah. Is Judge Carter still on?

Ms. MCCOLLUM. He is still on.
 Mr. CALVERT. Good. Okay.
 We will talk, Judge.
 All right. Thank you.
 Ms. MCCOLLUM. Thank you.
 Ms. Kaptur.

ENERGY AND THE DEFENSE PRODUCTION ACT

Ms. KAPTUR. Thank you, Madam Chair, very much for this, and for all of our guests and the members.

My questions are two. The first relates to energy, the second the Defense Production Act.

In terms of energy, I have had a career-long interest in this issue, initially because of our entire politics being impacted by our oil imports, but over the years as we have advanced in the energy field. Now, with climate change, we have new challenges ahead of us.

I will just share with you that when I first got involved in this issue I was shocked at how unconscious the Department of Energy was about the energy that it consumed. It is the largest energy user in the country. And as a result of work over many years, we were able to get deputy assistant secretaries focused in the different departments on this issue, but it isn't really cohesive.

And as we look at trimming spending in all accounts really, not just defense, I wanted to ask you, from what you know, how could we better organize across the Department DOD's progress in terms of their own energy expenditures, but then in terms of DARPA and other research that are ongoing, breakthroughs that could help us both on the defense as well civilian side?

So that is question one.

Question two really relates to the Defense Production Act, and I, along with many of my colleagues, obviously, on this call, am concerned about where we are falling behind.

Many years ago, Thomas Johnson outlined many areas in which the United States was already losing edge. Those included lift capacity for a number of our systems, silicon wafers of late. Obviously, in cyber we are not doing as well as we would wish. Rare earth, strategic metals.

And, of course, medicines, where we don't make penicillin anymore, we don't make a lot of antibiotics in this country.

And I am worried about the ability to support military in theater.

So we hear a lot from President Biden about the Defense Production Act. But my experience is it is one of the weakest parts of the Department. It has never been given the support that it needs. And I am very concerned about meeting these gaps where other countries are ahead of us.

If we put too much burden on the Defense Production Act—which I support, I supported for 39 years. But I know how weak it is. And, therefore, I am concerned about staffing and capabilities there.

So the first deals with energy. How can we strengthen the Department's own consciousness in reporting and advancements in that field to better help our country in the world?

And then, secondly, Defense Production Act, in order to make things in this country again. How do we strengthen that particular arena of DOD, which has been underresourced for my entire career, four decades?

Thank you.

Ms. FIELD. I will take a stab at your first question related to energy.

You know, a number of years ago, I believe it was in 2014, we examined what DOD was doing related to net zero and whether there was a strategy in place. And there really wasn't much of one at all, and I am sure that is not a surprise to you. And it does not appear that a lot has happened over the last 4 or 5 years in that space.

We have been, GAO has been mandated to take a look at what DOD is doing in the net zero space in the coming year. And so one of the things we will be looking at is, is there a renewed, reinvigorated effort at the Department to develop a sound strategy for net zero?

So that is one area that I think should be examined.

The second, your question about structure. I believe that a number of years ago there was a DASD(E) position at the Department focused on energy, energy use, it was trying to look sort of across the board. I do not believe that position exists now or has existed in recent years.

But it would be interesting to see if the new administration reinstitutes a position like that and at what level. Some might argue that DASD(E) is not high enough.

So I will stop there on the energy piece and defer to the other witnesses on your second question.

Ms. KAPTUR. I appreciate that insight. I did not realize it was still operational. Thank you.

Ms. FIELD. I believe it is not still operational, I should say.

Ms. KAPTUR. Unbelievable. Unbelievable.

Mr. MAHNKEN. Just very briefly on your second question.

I mean, I do think that the Defense Department in recent years has begun a serious effort to look at supply chain and supply chain vulnerabilities. I know the Office of Commercial and Economic Analysis, as part of the Air Force, has been doing some work there.

And I think reducing that, that vulnerability, and whether it is bringing things—on-shoring jobs in the United States, or relying on our close allies who we know we can rely on, I think that is extremely important.

Ms. KAPTUR. Thank you.

Ms. MCCOLLUM. Thank you.

Mr. Ruppertsberger.

CYBERSECURITY

Mr. RUPPERSBERGER. Well, Madam Chair, congratulations on the assumption of this very important committee.

I appreciate you all being here today, the time that we are talking about critically difficult strategic choices.

The recent SolarWinds attack demonstrated the sophistication of our adversaries' cyber capabilities, and more importantly, our inadequate defense against them. And it was really I think shocking to

a lot of us who do a lot in the area of cyber about how inadequate our defenses were.

The attack impacted nine Federal agencies, like Cisco and Belkin, two of the largest that we deal with, that we have in our country, and by some estimates over 18,000 customers.

This was a really serious attack, and we really were unprepared. We need to do a lot better in our defense of our cybersecurity.

The issue that we have, we know that we need to do more. And our adversaries, like China, Russia, North Korea, and Iran, their capability is getting stronger. And by the way, we are, too, on the offense. But as SolarWinds demonstrates, we are not that way when it relates to our defense.

And my question is—and, I guess, Mr. Harrison, I assume, or anybody else that wants to pick up—if the defense budget is reduced, what impacts do you see on our ability to keep pace with these countries in areas like cyberspace and hypersonics?

Mr. HARRISON. Well, I can begin there.

I think that the impact is up to us. It is how we choose to implement a reduction in the defense budget will determine how much we are impacted in these critical areas that I believe are essential for the future force.

I think that we should prioritize our investments in cybersecurity, cyber attack capabilities as well, and in space security and being able to better defend our space systems from attack.

So a reduction in the defense budget does not mean that we have to reduce these areas.

I think it is also important that these are areas that need to be addressed in a strategically focused roles and mission review. Because if you go back to the Key West Agreement of 1948, space and cyber are not part of that. Those were not areas, domains in which we operated at the time.

They are very important domains today, and I don't think we have clear allocation of roles and responsibilities in these areas to ensure we don't have gaps or redundancies across the services.

Mr. RUPPERSBERGER. Yeah, I agree with you, too.

And I do want to get this in before my time or anybody else who wants to speak.

We also have an issue with the authorities of NSA. We need to maintain our privacy issues, and it is very important for our country. But in this situation, NSA was not allowed to be involved, even though they have—they do have the best technology in the world, I think, and also in our country.

And so I think we, as Members of Congress, and the private sector need to start working more together so that we can defend ourselves. Because what is happening now, a lot of the big companies aren't cooperating with each other. And teamwork would have made a big difference for our defense, and it just wasn't there now. And we need to look at the laws on what NSA can and cannot do without violating our privacy.

Do you have any comments on that?

Mr. HARRISON. I think you are exactly right on the point that this needs to be—in some of these areas, like cyber and space, they are areas that extend outside of just DOD and needs to involve more interagency coordination across government.

And that is one of the reasons that, as I have written in a recent paper on the need for a roles and missions review, that this, the allocation of these responsibilities, probably needs to happen at a level higher than a DOD instruction or a decision from the SecDef.

This needs to come from the White House. This requires overall executive branch leadership to clearly allocate what is the NSA going to be responsible for, what is the NRO going to be responsible for, what are the roles of Commerce and Transportation and all the other areas of government that are affected in some of these mission areas.

Mr. RUPPERSBERGER. But I also would add, Congress needs to be involved as far as making laws and to maintain our national security, but also our privacy issues.

Thank you. I yield back.

ENERGY RESILIENCY AND CLIMATE CHANGE

Ms. MCCOLLUM. Thank you.

Ms. Field, you wanted to make sure that we understood something correctly?

Ms. FIELD. Yes, just very quickly. In response to Representative Kaptur, I wanted to clarify. I said it was DASD(Energy) that has gone away. It was Assistant Secretary of Defense for Operational Energy. That is the position I think is not currently encumbered. And that would suggest a place potentially for the Department to look at this issue.

Ms. MCCOLLUM. Very good. And we will be having talking about energy resiliency and climate change at a future hearing. So thank you.

Mr. Carter, we could—it is you, myself, and Mr. Diaz-Balart. We could do another question for 3 minutes if that is okay with you?

Mr. CARTER. That is okay with me.

Ms. MCCOLLUM. All right. So, Mr. Carter, I am going to let you go next.

CONVENTIONAL FORCES REDUCTION

Mr. CARTER. Well, thank you.

First let me comment. And I don't know whether Mr. Cuellar is on, but Mr. Diaz-Balart is. I, too, have concerns about our neighbors to the south and what is going on with the Chinese down there. And I join them in saying that I have those concerns.

The CSBA exercise concludes that the reduction in conventional forces in a 10 percent cut scenario would limit flexibility to manage a crisis and yield a force that could at best win one war at a time and increase reliance on nuclear deterrence as an alternative. The report states conflict may become even more likely because adversaries can question whether the U.S. posture is even credible.

With that said, a reduction in conventional forces does not necessarily equate to a reduction in mission requirements. Consider the fact that despite less deployment rotations to the CENTCOM area of responsibility, approximately 15 percent of the soldiers stationed at Fort Hood, Texas, have been deployed during any month since 2011.

What happens when the attrition rate of near-peer threats' conventional forces is slower than the U.S. and conflict arises that re-

quires the quick regeneration of conventional forces? And for how long is the coinciding strain on existing conventional forces tenable?

If anybody wants to answer that one.

Mr. MAHNKEN. No, I will take a cut at it. Which is, look, I think, as unpleasant as it is to think about—and it is unpleasant—but we are in a period of great power competition and we face the prospect, however remote, of great power war. And everything—all the signs point to a very costly, very, very bloody conflict. And that unfortunate reality is something that we haven't had to face in a quarter century.

And part of that is thinking about how to best array the force, how to best array our infrastructure, how to best array industry to prepare ourselves for such a conflict, if only to deter it. And that includes attrition. That includes all sorts of things.

And so I think your point is good one. And I think we as a country need to realize that that is the world that we are living in, however unpleasant that may seem.

DOD AND TECHNICAL CAPABILITIES

Mr. CARTER. And I agree with that.

Finally, just to add something I just read recently. It is kind of interesting. When Silicon Valley first arose a lot of the work they were doing was related to our national defense. Right now, the civilian side of technology has leaped leaps and bounds forward, and yet our Defense Department's technology is greatly lacking. And in fact, one of the comments was the average soldier is carrying around more ability in his back pocket than they have at the entire Defense Department.

Would either of you like to comment on that?

Mr. HARRISON. Yeah, I think there is a lot of truth to that. I also wouldn't want to discount the exquisite technology that is being developed in the more traditional parts of the defense industrial base.

But you are absolutely right, that in many areas where there are dual-use capabilities, where things can be used for commercial purposes or for military purposes, we do see tremendous investment and innovation in the private sector.

I think that DOD needs to do a better job of figuring out how to work with those companies and how to leverage that innovation.

And as I said before, I think part of that is working with commercial companies on their terms and buying things as a service rather than a product. That is what a lot of these commercial companies are looking to do, commercially oriented firms.

Mr. CARTER. Thank you.

Ms. MCCOLLUM. Thank you.

Mr. Diaz-Balart.

CHINESE MILITARY MODERNIZATION

Mr. DIAZ-BALART. Thank you, Madam Chairwoman.

Again, I also want to continue to talk a little bit about China. The Chinese military has done some significant modernization efforts; one would argue rather successful ones.

And so, I kind of talked about this in a different realm in my previous question, but can you talk a little about the current Chinese

capabilities and what poses the greatest threat now to our men and women, to our servicemen and -women, who might be on the field one day confronting a Chinese military?

The conversation right before was talking about what that might look like. It is not a pretty thought.

So what are one of those capabilities that might threaten our men and women more greatly?

Mr. MAHNKEN. Yeah. So I know Mr. Harrison talked being threats to space. I would say also China has been focused on denying our ability to project power in the Western Pacific.

So whether it is our air bases, our Naval vessels, our soldiers, our marines, they have been focused squarely on us, where they have had us in the crosshairs. And it is development of ballistic and cruise missiles, development of hypersonics, increasingly capable air and missile defenses on their end, yeah, we are right in their crosshairs.

So I think our infrastructure, our basing, our bases in the Western Pacific need defense. Our power projection forces need defense. And we need to develop concepts to be able to project power to defend our interests, defend our allies, and defend our territory in the face of those threats.

Mr. DIAZ-BALART. I guess one of the most ambitious things that China has done recently is this Chinese, the Belt and Road Initiative. Again, going back to my friend and colleague Mr. Cuellar, he mentioned about there is a lot of Chinese presence in the Western Hemisphere. And so more than 60 countries have signed on to projects linked to this initiative.

How can we do a better job countering them, particularly in this hemisphere and elsewhere? And is it just a function of money? How can we do a better job?

Mr. MAHNKEN. I think working together with our friends and also providing an alternative to what the Chinese are offering. I know, look, the Trans-Pacific Partnership had its supporters, had its detractors on both sides of the aisle. I think that was a good effort to try to bring people together in a vision that is kind of in line with our values.

I think we need to be doing that. We need to provide a democratic alternative to what China is offering and give the countries that want to make the better choice the ability to make the better choice.

Mr. DIAZ-BALART. I am out of time. Thank you, Madam Chairwoman.

FOCUS ON DIPLOMACY

Ms. MCCOLLUM. Thank you.

So, Mr. Diaz-Balart, that is a perfect lead-in, how Mr. Mahnken finished his question, for where I wanted to go.

I want to just kind of shift this a little bit, because we have heard former Defense Secretaries talk about our power, our soft power, the importance of having a strong State Department. And lots is often given about what the Chinese and the Russians are spending and what we are spending in an arms race. And so the focus has been on military.

But you also know how important it is to our military to have good diplomacy, and that helps develop enhanced security.

So my question is, what are some of the things that our military should be leaning towards for our State Department maybe to do to develop enhanced security and ideas on how we could work smarter with our allies to address these great powers concerns that we do have about China and Russia, and how that could maybe have a great influence in an approach to be more disciplined in the Department of Defense's top line spending and maybe even see it decrease?

Mr. MAHNKEN. I will take a stab at it.

I mean, look, I worked for Secretary of Defense Bob Gates, who I think believed in his bones about the importance of a strong State Department and really the symbiotic relationship between diplomacy and military force.

Diplomacy is more credible when undergirded by the threat of military force. And, similarly, diplomacy can help avoid the use of military force. So I think the two go hand in hand.

I do think when it comes to our allies, if I just focus on the military part of it, though, being able to work closely with our allies, interoperability with our allies, really is key going forward. I think they are looking for us to have skin in the game, and we are looking for them to have skin in the game.

So I think the two really are inseparable, a strong military and a strong diplomatic corps and strong State Department.

Mr. HARRISON. If I could jump in.

One specific area where I see there is a lot of potential to leverage our soft power to help improve our security is norms of behavior in space.

And that is one area where it needs to be an all-of-government approach, not only to try to establish internally within the U.S. Government what we believe are positive, constructive norms of behavior that we are willing to follow ourselves, and then put those forward in the international community and start to build a consensus with our allies and partners.

Norms of behavior in space help you identify what the abnormal behavior is so you can call it out and you can work against it. And we want to be at the forefront of setting those norms in space because we want them to reflect our values and our interests both in this domain and on Earth.

I would commend NASA for something it did within the past year in setting up what they called the Artemis Accords, and that is a set of agreements that other countries have to sign onto with the United States in order to partner with us on our mission to go back to the moon and establish a permanent presence there.

And so those Artemis Accords are a good first step in helping to establish norms of behavior and get international agreement and buy-in among like-minded countries.

Ms. MCCOLLUM. Thank you.

And I realize I kind of asked a political question there for Ms. Field from GAO. And I can read a report on State Department from GAO.

I want to thank the three of you for your presentation. I wanted to take this opportunity of waiting for the Biden administration to

prepare their first budget to present to Congress for us to also look at the way we talk about defense spending, to look at the programs, to ask some of the questions, rather than just have the military folks come in and we start doing line by line and this space and this program and you know.

This gives us an opportunity to think about where we want to be 5, 10 years from now and how we are going to have to maybe make some really hard and tough choices to get to where we want to be there.

So we are going to be moving forward, as I said to other committee members, talking about resilience and climate change, and look forward to a whole host of leaders from academia and from some of the other think tanks all across the spectrum that work and have opinions on defense spending and that.

So thank you for being the first three out the gate for us to do that. And we might have a couple other questions we will submit to you. As a former teacher, I promise it won't be a deluge of homework, it just might be something here and there.

But thank you for so much for setting a wonderful tone for this first hearing.

And so with that, Mr. Carter, I am going to adjourn the meeting. This meeting is adjourned.

TUESDAY, MARCH 2, 2021.

U.S. MILITARY SERVICE ACADEMIES OVERVIEW

WITNESSES

**LIEUTENANT GENERAL DARRYL A. WILLIAMS, SUPERINTENDENT,
UNITED STATES MILITARY ACADEMY WEST POINT**

**VICE ADMIRAL SEAN BUCK, SUPERINTENDENT, UNITED STATES
NAVAL ACADEMY**

**LIEUTENANT GENERAL RICHARD M. CLARK, SUPERINTENDENT,
UNITED STATES AIR FORCE ACADEMY**

Ms. McCOLLUM. So now we are officially to order here. This meeting is going to be fully virtual, and so I am going to go over a few housekeeping rules.

For today's meeting, the chair or the staff designated by the chair may mute participants' microphones when they are not under recognition for the purpose of eliminating background. Everybody was really good last time, so I don't anticipate any problems this time.

Members, though, you are responsible for unmuting yourself. If we notice that you have not unmuted yourself, I will ask you if you would like the staff to unmute you. If you can please indicate by nodding your head, and staff will unmute your microphone.

I remind all members and witnesses—they should see it on the screen; if they don't, let us know—there is a 5-minute clock and the 5-minute clock will apply. If there is a technical issue, we will move to the next member until the issue is resolved, and you will keep the balance of your time.

Once again, you will notice a clock on your screen, and it is going to show how much time is remaining. At 1 minute, the clock will turn yellow. At 30 seconds remaining, I will gently tap the gavel to remind members that their time has almost expired. When your time has expired, the clock will turn red, and I will, when it turns red, recognize the next member.

In terms of speaking order, we are going to follow the order set forth in the House rules, beginning with the chair and the ranking member. Then members present at the time the hearing is called to order will be recognized in the order of seniority, and, finally, members not present at the time the hearing is called to order.

Finally, House rules require me to remind you that we have set up an email address to which members can send anything they wish to submit in writing at any of our hearings or our markups. So this email address has been provided to your staff.

One other piece of housekeeping. We are going to have votes during this. When the votes take place, I will give a list of order of members to speak, I will turn the gavel over to the most senior member present, I will go vote, and then I will come right back.

So we will keep this meeting going forward so everyone can ask their questions.

So, without further ado, I am going to make a few remarks here.

OPENING STATEMENT OF CHAIR MCCOLLUM

This morning, the subcommittee will receive testimony and an update on military service academies.

And I welcome our three witnesses: Lieutenant Darryl Williams, superintendent of West Point, founded in 1802; Vice Admiral Sean Buck, superintendent of the Naval Academy, founded in 1845; and Lieutenant Richard Clark, superintendent of the Air Force Academy, founded in 1954. I do know the Air Force Academy is 66 years old, because that is the year I was born too, so we were established at the same time.

Gentlemen, I want to thank you all for being here today, and I appreciate you being here to share the current state of military service academies.

Each of the service academies house some of the best and brightest of our young generation. Many of these young men and women will hold leadership positions in their respective services for the next 30 years. Given this fact, it is imperative that they are all well-educated, not in only executing military missions of the future but also grounded in the ideals in which this Nation has been built and to the oath that they take to serve.

Each of these topics we will discuss today will encompass how effectively each one of the academies is striving to achieve these goals. Some topics for today's hearing include the admission structure at each of the service academies and how our academies are reflecting the diversity of our country in preparing cadets, midshipmen, and, I will add, doolies at the Air Force Academy for the myriad challenges that they face ahead; some of the social issues each academy is dealing with, notably sexual assault, racism, diversity, character, and the way forward for that to continue to progress.

Congress is here to support you in these efforts, but we also know that you have been dealing with something new, the impact of COVID-19 at each of the service academies. How has it impacted learning, operations, and the well-being of the student body, faculty, and campus workforce?

And then I would like to have a robust discussion on maintenance, restoration, and resilience efforts for each of these campuses. West Point and the Naval Academy have buildings over 100 years old. And the Air Force Academy, its buildings are on average 60 years old. The military service campuses have not escaped the impacts of climate change, and we welcome each of the superintendents to share their concerns and their ideas to address these environmental calamities.

We also look forward to hearing what more we can do as Members of Congress to help the service academies in their nomination process. It is an honor and a privilege that we have the ability to make these nominations.

Once again, I want to thank you for appearing before the committee today to discuss these issues.

And now I want to recognize our distinguished ranking member, Mr. Calvert, for any comments he might want to add.
Mr. Calvert.

OPENING STATEMENT OF MR. CALVERT

Mr. CALVERT. Thank you. Thank you, Chair McCollum.

Today, I am very pleased to welcome the superintendents of our incredible service academies, Lieutenant General Clark, Lieutenant General Williams, and Vice Admiral Buck. Thank you all for taking time to testify to us today.

This subcommittee is responsible for ensuring our military has the tools it needs to protect our Nation and carry out the National Defense Strategy. We hear from service chiefs and secretaries, combatant commanders, and other leaders in the Department of Defense about critical resourcing requirements and threats. We must never lose sight that these missions cannot be carried out without capable, intelligent, and prepared soldiers, sailors, marines, airmen, and now guardians.

That is why today's hearing is so important. As our witnesses have noted in their respective testimonies, our academies continue to thrive and produce the world's finest leaders, but they also face a range of challenges that we must confront with a unified vision.

COVID-19 has undoubtedly reshaped the way all education is done in this country, as the chairman noted. This is no different for our service academies. I am sure we will discuss these impacts in great detail today.

I am aware how well the academies have adjusted their curriculums to educate students in a new learning environment. This was made possible by the incredible leaders before us today and their experienced and professional staff.

So, first off, I would like to thank each of you.

I would like to commend the future leaders currently studying at our academies. Your commitment to our Nation, especially during a time such as this, it does not go unnoticed or unappreciated.

As we continue the fight against COVID-19, the academies are faced with challenges such as addressing aging infrastructure, increasing inclusion, diversity, and preparing our cadets and midshipmen for the wars of the future. I have great confidence in the leaders before us today and their students, as we work together to take on these challenges, and I look forward to hearing from them in more detail today.

Thank you, Madam Chair. I yield back.

Ms. MCCOLLUM. Thank you very much. Well-said.

For everyone, your full written testimony that has been provided by our service academies' superintendents will be placed in the record, and members have copies at their seats. So, in the interest of time, I strongly encourage each of you to keep your summarized statement to 5 minutes or less, to be complete but succinct in answering questions, because we will have votes and we do want to get to your questions.

So we are going to go in this order: Vice Admiral Buck, you will come after Lieutenant General Williams; and then, General Clark, you will close it out.

So, thank you for your testimony. And I will defer my questions to the end so I can go vote and we can keep this moving.

I would like, at this time, to ask Lieutenant General Williams to kick off the testimony, and then the rest of you fall in the order I mentioned. Thank you.

SUMMARY STATEMENT OF LT. GENERAL WILLIAMS

General WILLIAMS. Chair McCollum, Ranking Member Calvert, distinguished members of the committee, thank you for the opportunity to discuss the United States Military Academy, and thank you for your continued support to its programs.

If you were at West Point today, you would see an academy thriving as it develops leaders of character, despite the constraints of the global pandemic. The Academy's mission is to educate, train, and inspire the corps of cadets so that each graduate is a commissioned leader of character, committed to both Army values and the ideals of duty, honor, country, and prepared for a career of professional excellence and service to the Nation as Army officers.

Our vision is to be the Nation's premier leader development institution. We do this through a process where cadets develop the academic, military, physical, and character foundation necessary for continued professional growth and service while internalizing the values necessary to live honorably, lead honorably, and demonstrate excellence.

Our faculty and staff model is deliberately focused on developing leaders of character, and we have an outstanding team of faculty, coaches, tactical officers, and noncommissioned officers, all hand-selected—a blend of soldier and civilian talent and expertise committed to our mission and to cadet excellence.

We have operationalized our mission and strategy around five lines of effort that constitute my priorities: one, developing leaders of character who are prepared to fight and win in the crucible of ground combat; two, cultivating a culture of character growth necessary to build and sustain cohesive teams built on trust, dignity, and respect; three, building diverse and effective winning teams by leveraging the talent of every member of the organization; four, modernizing, sustaining, and securing our capabilities and infrastructure and strengthening partnerships with academe, our alumni, the American people, and our international partners while continuing to contribute to the Army profession.

All five lines of effort ultimately support the Army's mission, enhance Army readiness, and are aligned with Army strategy and initiatives, including its "people first" mentality and "winning matters" attitude.

Over the past year, we successfully continued our mission while adapting to the realities and overcoming the challenges of the COVID-19 environment—challenges that have made our entire community stronger, more resilient, and cohesive. This was possible because of our deliberate, disciplined, and comprehensive approach throughout the pandemic that ensured the health and safety of the corps and the West Point community at large.

We quickly regained the critical human interactions that are essential to the success of our leader development experience after our remote education last spring. Reluctantly, over the past year,

we had to contract our engagement with our alumni, parents, and the local community on post to protect the corps and the community. We look forward to reestablishing connections as conditions allow.

Over the past year, we sustained Army readiness by successfully graduating a thousand new officers into the Army; executed our academic, military, physical, and character programs; and competed in intercollegiate athletics.

Our cadets have excelled across the board, notably in our Graduate Scholars Program. To date, West Point proudly boasts 13 winners of prestigious graduate scholarships, to include two Rhodes scholars. Additionally, we have several semifinalists in ongoing competitions, including 18 semifinalists for the Fulbright scholarship. In fact, the Fulbright Commission has recognized us as the top-producing institution for the 2021 academic year.

These inspiring young men and women are motivated and demonstrating excellence every day. I am so proud to be their supe, and you can be proud of them as well.

Character development is the most important thing we do at West Point, because, ultimately, character development is critical to building Army readiness. We meet cadets where they are and immerse them in a culture of character growth. This means that character development is ongoing throughout West Point—in the classroom, during military training, on the athletic fields, and in the locker rooms and barracks. Character development is deliberately woven into every aspect of the cadet experience to ensure we develop them into leaders our Army and our Nation require: trained, disciplined, and fit officers who lead by example, create cohesive teams built on trust, dignity, and respect, and who take care of our Army's greatest strength, its people.

Over the last 2 years, we mobilized academy resources to better integrate our character development efforts throughout all aspects of cadet leader development. We created the Character Integration Advisory Group, which elevates character development resources to my level of command for additional emphasis and synchronization across all programs.

Additionally, aligned with the Army, we continue our efforts toward eliminating the corrosive behaviors that undermine trust, such as sexual assault and harassment, racism, and extremism. We are making progress in this space but recognize we still have a long way to go.

In closing, I remain confident we are preparing our cadets well to lead in the 21st-century Army while cultivating the culture that puts people first so that they are ready to build and lead cohesive teams—teams made up of the sons and daughters entrusted to our Army.

I thank you again for the opportunity to discuss the state of our academy with you today. I look forward to your questions.

[The information follows:]

RECORD VERSION

STATEMENT BY

LIEUTENANT GENERAL DARRYL A. WILLIAMS, USA
SUPERINTENDENT OF THE UNITED STATES MILITARY ACADEMY

BEFORE THE

SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

FIRST SESSION, 117TH CONGRESS

UPDATE ON THE STATE OF THE UNITED STATES MILITARY ACADEMY

MARCH 2, 2021

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON APPROPRIATIONS

Appropriations Defense Subcommittee Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the committee, thank you for the opportunity to discuss with you the mission, goals, and challenges of the United States Military Academy and thank you for your continued support to its programs.

The United States Military Academy was founded in 1802 under the presidency of Thomas Jefferson. He founded the Academy to create a professional officer corps for our Army who were trained in the practical knowledge required for an expanding nation. In his vision, Jefferson also saw West Point as a means to democratize American military leadership and to ensure that it would be representative of American society. Since that time, the leaders who have graduated from the Academy have been representatives of the nation they served. They come from all walks of life – diverse economic, social, religious, and ethnic backgrounds.

Since President Thomas Jefferson established West Point in 1802, West Point graduates have provided exceptional leadership for America through good times and bad, peace and war. Early leaders like William MacNeil and George Washington Whistler helped build the nation in the early 19th century. In the early 1900s, George Goethals directed the construction of the Panama Canal, one of the greatest engineering achievements in history. During the global conflicts of the 20th Century, individuals like John J. Pershing, Douglas MacArthur, and Dwight D. Eisenhower secured the nation. Graduates like "Hap" Arnold and Benjamin O. Davis, Jr. were pioneers in military aviation, while others like Frank Borman, Ed White, Jr., Buzz Aldrin, and Anne McClain walked on the Moon and explored the stars. West Point's Long Gray Line produced combat leaders like Norman Schwarzkopf, Wesley Clark, Vince Brooks and Martin Dempsey; and individuals as diverse as Luis Esteves, the founder of the Puerto Rico National Guard, Roscoe Robinson, the Army's first African American four-star general and Lloyd Austin, the nation's first African American Secretary of Defense. We are proud that the people we taught made much of the history we teach. As we navigate the second decade of the 21st Century, West Point must remain well postured

to continue providing the leaders of character who will lead the nation through our current and future challenges.

Our nation faces a complex set of challenges as it builds and maintains readiness for near-peer combat in an age of persistent competition, while simultaneously confronting a global pandemic, racial tension, and mounting extremism. Our graduates entering this complex environment will be called upon to navigate this new landscape. This increasing complexity reinforces the purpose of the United States Military Academy: to build the leaders of character our Army and our nation require. I am pleased to report that West Point is well-positioned to fulfill this purpose.

The mission of the United States Military Academy is, "to educate, train and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country and prepared for a career of professional excellence and service to the Nation as an officer in the United States Army." Our vision is to be the nation's premier leader development institution.

We accomplish our mission through the West Point Leadership Development System. After spending 47 months in the system, we expect our graduates to live honorably, lead honorably, and demonstrate excellence. Cadets internalize the values necessary to achieve these outcomes by completing rigorous and challenging experiences tailored to their individual developmental needs. Cadets develop knowledge, skills, and abilities so upon graduation they will possess the intellectual, military, physical and character foundation for professional growth and service as commissioned officers in the Army. They will be prepared for the uncertainty and ambiguity associated with military service, and able to anticipate and lead change within their organizations.

This system would not work without leadership and mentorship—a community of support—that is vital to character growth. We have a diverse cadre of competent, committed, and caring military and civilian staff, faculty, and coaches who provide support, feedback, and mentorship to cadets during their time at the Academy.

When I last addressed this subcommittee in 2019, I articulated five priorities that focused Academy resources. Since then, those five priorities have coalesced into the five lines of effort that comprise the Academy's campaign plan that operationalizes our strategy through 2025.

In **line of effort #1 (Develop Leaders of Character)** we are integrating and synchronizing our four developmental programs (character, military, physical, and academic) to develop principled officers for our Army who are guided by good character and prepared for the "crucible of ground combat."

In **line of effort #2 (Cultivate a Culture of Character Growth)** we are fostering and strengthening a safe and secure environment built on trust and both the Army and West Point Values. Our efforts focus on inclusion, prevention of sexual assault, harassment, and racism while maintaining our commitment to honorable living and a sense of duty.

In **line of effort #3 (Build Diverse and Effective Winning Teams)** we are focusing effort on acquiring the talent of the entire West Point enterprise; our cadets, staff, faculty, coaches, and the West Point community to make them representative of our Army and the nation more broadly.

In **line of effort #4 (Modernize, Sustain, and Secure)** we are investing, with broad Army support, in holistic efforts to modernize the Academy's capabilities and infrastructure to enable the developmental environments necessary to educate, train and inspire the Corps of Cadets most effectively through the end of the 21st Century. This includes maintaining a secure operating environment through energy resilience and force protection measures.

Finally, in **line of effort #5 (Strengthen Partnerships)** we are seeking opportunities to contribute to the Army profession while sustaining our partnerships with Academe, Alumni, Congress, and the American people. Aligned with the National Defense Strategy, we aim to grow our international partnerships.

While our main effort resides in developing leaders of character and cultivating the culture of character growth, we realize that the enabling efforts in LOEs 3, 4, and 5 are absolutely critical to realizing and sustaining our vision. The United States Military Academy must actively compete in the higher education marketplace to attract the scarce and finite resource of talented young Americans willing to commit to a lifetime of service to the nation. To compete effectively for this talent and posture ourselves to refine it even further once at West Point, we must maintain cutting-edge recruiting and development programs, invest in excellent facilities, attract, and sustain high-quality faculty and staff, and provide first-rate integrated student services and institutionally supported athletics.

We must maintain an infrastructure that remains competitive with other tier one academic institutions while preserving the historic integrity of a 200-year-old institution and national historic landmark. Our robust modernization plan began with the barracks revitalization in 2011 and will finish with the academic building upgrade program in 2035. We appreciate the Army's and your commitment to ensure that the Academy maintains relevance and preeminence for many years to come. We must also cultivate and maintain the strategic partnerships that keep us connected to the nation's toughest problems, provide unparalleled developmental opportunities for our cadets, faculty, and staff, and allow us to contribute intellectual capital back to the Army and nation.

Academy Operations in the COVID Environment

The past year has been extraordinarily challenging as the nation and the world have faced the impacts of COVID-19. One year into this fight, I am pleased to report that the United States Military Academy is thriving. We successfully continue our mission as we adapt to the realities of the COVID-19 environment. At West Point, which resides not far from what was the first national epicenter of this pandemic, we were faced with a dual challenge—protecting the community and accomplishing our mission. During this pandemic, we maintained a responsibility to sustain Army readiness by graduating 1,000 young officers ready to lead and continue the mission in a COVID-19

environment. As the Army Chief of Staff, General McConville reminded us early on: "you cannot telecommute to combat." The same is true for developing high-quality leaders: you simply cannot do it "virtually." We knew early on that transitioning fully to remote learning was not a viable option for the Corps of Cadets.

Therefore, last March, we mobilized the entire West Point enterprise to plan and execute Operation Resilient Knight—a team effort to accomplish our mission while protecting the force. As part of this overall effort—our incredible faculty quickly transitioned temporarily into an online learning environment, allowing our cadets—no matter where they were—to continue classes and complete the academic year. We finished the academic year strong while implementing creative ways to conduct some of our end-of-year events virtually. With tremendous help from the Army, we built capacity to test, treat, and monitor for COVID-19 at West Point, which allowed us to return the Corps deliberately and methodically to the Academy.

This return of the Corps was executed in three phases: first, returning the Class of 2020 for graduation and commissioning; second, returning the other three classes for summer training; and finally, welcoming and integrating the new Class of 2024 into the Corps of Cadets. We conducted a safe and socially distanced graduation ceremony for the Class of 2020, which celebrated the accomplishments of our newest graduates and demonstrated the resilience of our Academy and Army to the world. We are proud to report the Corps of Cadets is currently 4,400 strong, learning and leading in-person to allow for the human interaction that is critical to our leader development system. Our current Academic year has been a combination of remote, hybrid, and in-person instruction that provides us the capacity to conduct instruction safely in the COVID environment. Our cadets report that the in-person experience has fostered greater connectedness among the Corps and leading through this adversity is creating lifelong lessons in resilience and leadership.

All of this was possible because of the great support we received from the Army, and more importantly, the herculean efforts of every member of the West Point team. Whether they were on the front lines of this fight or working behind the scenes, every

teammate – Soldier and civilian – stepped up and went above and beyond, often helping in areas outside their lanes of expertise. It is because of their hard work, dedication to duty and commitment to excellence that we continued to accomplish the mission while protecting the force. I am proud to be their commander and superintendent, and we are all truly grateful for everything they do.

A Culture of Character Growth

Since taking command of the United States Military Academy, creating a culture of character growth has been integral to our leader development mission. Each summer, approximately 1,200 diverse, talented young men and women from across this great nation and around the world enter the Academy. They arrive from every corner of the nation and all walks of life with a myriad developmental experiences and backgrounds. At West Point, we meet them where they are and develop them into the leaders of character our Army and our Nation require. Our graduates must be able to lead by example and create the cohesive teams that will take care of our Army's greatest strength and most important weapon system . . . its people.

Our young people today are the most digitally connected and technologically savvy in human history, and we bring in the best and brightest our nation has to offer. While this comfort with technology is helpful for the future, it may undermine their ability to develop the healthy, human relationships our Army requires to build cohesive teams that fight and win in ground combat. Early in their development, some cadets tell us they lack confidence in communicating difficult topics effectively with those they lead. Lack of development in critical relationship and interpersonal skills creates vulnerabilities in our population. These vulnerabilities create an environment where corrosive behaviors take hold and erode trust. Our 47-month program provides cadets with the experiences and repetitions necessary to get them where the Army requires them to be. Inclusive and effective leadership requires our graduates to look a young Soldier in the eye, know when the Soldier is confronted with challenges, and make the caring, people-first decision that gets them the help they need and deserve. These actions build trust, and trust is a requirement for winning in combat.

Over the last two years, I have mobilized Academy resources to instill the character attributes and skills necessary for cultivating the healthy human relationships that create the cohesive teams and provide for a safe and secure environment for our Cadets to thrive in. We realize we have some work to do. Cultivating culture takes time and resources. To enable this cultural shift, I have elevated the character development program and character integration to my level of command through the creation of a Character Integration Advisory Group (CIAG). This group is comprised of ten newly hired personnel that will integrate character development across our 47-month experience in a deliberate and progressive fashion. Rooted in the Army values and the West Point motto of Duty, Honor, Country, our character development program is predicated on the idea that character is caught through culture, taught through developmental experiences, and sought by inspired individuals. We firmly believe that character equals readiness and we are allocating resources accordingly.

Over the last two years, our character development efforts have directly confronted the corrosive behaviors that undermine trust, erode wellness, and make Soldiers vulnerable to extremism. Our four Honorable Living Days brought the entire Corps of Cadets, staff, and faculty together for conversations that confront sexual assault, sexual harassment, and racism. Based on feedback and input from the Corps of Cadets, we will confront suicide and promote wellness and resiliency at our next Honorable Living Day on March 30th. These efforts are creating a culture at West Point that encourages the tough conversations that create human connection, build trust, and make people feel like they are a part of a team rather than merely being on a team. These Honorable Living Days are not stand-alone events. Rather they are starting points for cadets and leaders from across the Academy to support each other in their character development and provide them the skills they need to eliminate corrosive behaviors from our ranks. These events provide our cadets the skills, time, and space to think critically and practice the leader actions we seek to instill.

The Corps of Cadets is taking ownership and leading cultural change by embracing these efforts. For example, this summer, Cadet Reilly McGinnis, our First Captain, along with her leadership team, and in collaboration with the CIAG, led a summer Cadet

Leader Development (CLD) detail for the majority of our First- and many of our Second-Class cadets that further dedicated time and resources to addressing honorable living, resiliency and countering sexual assault, sexual harassment, and racism. Reilly implemented daily "Tree Talks" that required small-group conversations where diverse groups of cadets came together to listen with an intent to learn rather than respond. This week-long endeavor set the tone for the First Class as they assumed leadership of the Corps. It provided a foundation for the development of our fourth Honorable Living Day focused on racism. CLD provided our peer support staffs with the confidence and vision they needed to own and fully develop that Honorable Living Day. These two examples illustrate how the Cadets are changing the Academy's culture to promote and integrate character development as a part of a comprehensive prevention strategy to eliminate sexual assault, sexual harassment, and racism.

The organization responsible for this comprehensive prevention strategy is the CIAG—a newly formed organization that integrates character development and answers directly to me. Since 2019 when I last testified before you, we have made tangible and permanent changes to our organization structure to bolster prevention. Our newly assigned personnel in the CIAG, working in close collaboration with our new SHARP program coordinator and newly hired prevention specialists give us the expertise and capacity to develop and integrate a comprehensive, 48-month sexual assault prevention program within our overarching character development effort. Dedicating full-time personnel to prevention and character development fulfill a key requirement in the Department of Defense's Prevention Plan of Action (PPOA) for prevention of sexual assault.

Sustainable cultural change and effective prevention require cadet involvement and ownership. We recognize that cadets are often more comfortable discussing personal challenges with their peers, so we continue to build our peer assistance capability within the Corps. Our cadet Trust staff continues to advise the cadet chain of command on SHARP-related topics and serves as a resource for their peers who may be struggling with the impact of sexual harassment or assault. Our peer support counselors receive professional training and certification to provide support for cadets struggling with

mental wellness. Additionally, informed by the Center for Disease Control best practices, we piloted and are implementing a Relational Character (RC101) course to educate our cadet leaders about developing healthy relationships and facilitating difficult discussions. Cadets who completed this pilot course were integrated into all 36 cadet companies to support the chain of command and their peers. By the completion of RC101 this summer we expect to have over 100 cadets trained. We have also brought the Army's Master Resiliency Trainer Course to West Point, allowing cadets to not only receive the Army's Master Resiliency Trainer skill identifier, but more importantly, return to their Cadet Companies with a fresh skillset for identifying and helping those in need.

An important motivation for increasing sexual assault reporting is effective, responsive, and compassionate victim advocacy. We have made tangible and permanent improvements in our sexual assault response capabilities and policies. To encourage reporting, I have instituted a policy that ensures victims will ordinarily not be punished for their minor misconduct discovered in the resulting investigation. Additionally, Keller Army Community Hospital now has a full-time Sexual Assault Nurse Examiner so that victims can get the immediate care they need. Our Criminal Investigations Division now has a special victim's investigator which allows for more timely and effective investigations. We have increased our legal capability with a full-time Special Victims Prosecutor and two Special Victim Counsels. Our campaign to support the DoD "Catch a Serial Offender" (CATCH) program has added sixteen cases to the CATCH database, which helps apprehend serial offenders.

In response to the Fort Hood investigation, we provided all 4,400 cadets with a briefing on the lessons learned in the aftermath of the Fort Hood investigations across 20 separate iterations that adhered to COVID restrictions. These briefings yielded seven new reports of sexual assault and an additional three CATCH entries just last month. Our first semester reporting rate is the highest rate of reports on record. We believe these comprehensive actions are helping to build trust in our sexual assault and harassment response systems that encourage cadets to report. We are grateful to our Army leadership for resourcing our requirements, but we realize that resources alone will not eradicate sexual assault and harassment.

While we have made progress, we still have work to do. As we continue to build on our culture of character growth, we are examining ways to bolster accountability for actions at the squad level. We recognize that sexual assault, sexual harassment, racism, extremism, and suicide will not be solved solely by the actions of senior Army leadership. We as leaders must set the culture that makes treating one another with dignity and respect the norm. We must also have accountability at all levels, and more importantly, we need cadets to have the character and sense of duty required to enforce accountability in un-governed spaces where these problematic behaviors often occur. We are harnessing the latest version of the Defense Equal Opportunity Climate Survey (DEOCS) to inform the Corps of its current climate, target areas for improvement, and empower cadets to lead change. We have work to do in this area, and we are committed to continued cultural change.

The same sense of duty that necessitates accountability in others also applies to accountability for personal behavior. The West Point Honor Code and Honor System are integral to the foundation of your Academy. Since taking command of the Academy, I have been reviewing various aspects of how we implement the Honor System at West Point and this fall, decided to embark on a year-long, holistic review of the Honor System to ensure it maintains the basic requirement for Honorable Living while keeping pace with the technological realities of modern society. Last spring, while in a remote environment, seventy-three cadets were accused of cheating on their MA104 Calculus term end exam. We are in the process of investigating and hearing all allegations and the outcome of each case will be determined based on its own merit. The tenets of honorable living remain immutable, and the outcomes of our leader development system remain the same: graduates who live honorably, lead honorably, and demonstrate excellence. The Army, and especially the American people, expect and will not tolerate anything less.

Conclusion

For more than 200 years, West Point has provided our Army and nation with leaders of character who have honorably and courageously led the way through some of our Nation's most challenging and difficult times. Our graduates have always possessed the

strength of character to overcome adversity and emerge victorious in the face of those challenges. They have received the broad education required to think, lead, and win across the spectrum of conflict from high intensity combat to humanitarian support operations and everything in between. They have received the technical education required to integrate new technologies and address emerging threats.

I remain confident that we are preparing our cadets well for both the anticipated and unanticipated challenges of the future. Our cadets are trained, fit, disciplined, and prepared for the rigors of ground combat. General McConville put People First on his first day as the Army Chief of Staff. At West Point, we are cultivating the culture that fosters the People First philosophy in our young men and women so that they will be ready to develop and lead cohesive teams built on trust in the defense of our great nation. I have no doubt that they will do exactly that and do it with distinction.

I thank you again for the opportunity to discuss the state of the United States Military Academy with you today. I hope you all will take the opportunity to visit us at West Point and witness first-hand the actions of the tremendous young women and men that you have nominated. We are excited for the future of the Academy and we hope that the Army and Congress continue to view West Point as your Academy and a strategic asset for the defense of the nation. I look forward to your questions.

SUMMARY STATEMENT OF VICE ADMIRAL BUCK

Admiral BUCK. Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today on behalf of the United States Naval Academy.

Our mission is to develop midshipmen morally, mentally, and physically and to imbue them with the highest ideals of duty, honor, and loyalty. I am pleased to report to you today that the Naval Academy is succeeding in its mission.

The COVID-19 pandemic has presented incredible obstacles to achieving that mission over the last 12 months. We had to rapidly adapt our organization to meet the threat of COVID and continue to execute our mission safely and effectively. However, despite these challenges and obstacles, our faculty, staff, and coaches, and, most importantly, our brigade of midshipmen have endured, often creating their own success.

This past year, we successfully graduated and commissioned 1,002 members of the class of 2020 into the fleet, and they are now serving as ensigns and second lieutenants in our Navy and our Marine Corps. We also brought aboard the class of 2024 for an in-person Plebe Summer experience. We are proud of the resilience and dedication displayed by our newest Naval Academy class, who were inducted in the midst of a pandemic.

It is our firm belief at the Naval Academy that you cannot develop leaders online. This is why we made it a priority and a mandate to return the entire brigade to Annapolis this past fall for the 2020-2021 academic year.

In order to do this, the Naval Academy reimagined how our most basic operations are conducted in order to keep the entire brigade, as well as our faculty, staff, and coaches, safe on the Yard. This ran the gamut and included hybrid, socially distanced learning; instituting a robust COVID-19 surveillance and testing protocol; dedicating one of our eight dormitory wings for quarantine and isolation; and shifting our meals to a noncommunal grab-and-go format.

Because of our adherence to public health guidelines across our entire Naval Academy community, our COVID-19 positivity rates have remained very low throughout the majority of the school year, well below those of our surrounding community. While we have seen an uptick in the number of cases within the brigade during this past week, we are confident that we will be able to reduce our numbers using the same strict mitigation protocols employed by our Navy's fleet units to contain the spread of COVID-19.

We recently began the process of vaccinating volunteers from our faculty and staff and hope to start our midshipmen vaccination process soon—an imperative if we are to execute fleet training this coming summer.

We are looking forward to when the COVID vaccine allows us to regain a greater sense of normalcy here in Annapolis. In the meantime, we will continue to prioritize our midshipmen's physical and mental well-being during this difficult period.

In addition to the challenges posed by COVID-19, the Naval Academy has not lost focus on our long-term and ongoing priority

of developing leaders of character. The racial justice movement in America that rose this past summer impacted many members of our Naval Academy community, and the associated events have provoked important conversations regarding diversity, equity, and inclusion on our campus.

The Naval Academy must be a visible cornerstone of a value-based Naval culture of dignity and mutual respect. And that includes improving sexual assault prevention efforts and continuing to strengthen response support for victims.

There is continued work to be done at the Naval Academy so that we can attract, retain, and develop a diverse cadre of future Navy and Marine Corps officers who are resilient, innovative, and equipped to lead in a highly diverse, socially complex, and multigenerational workforce.

Lastly, we remain vigilant of the long-term existential threat that climate change and sea-level rise pose to our continued operations here in Annapolis. We have studied the science, we have implemented several resiliency projects, and we are in the process of formulating a military installation resiliency plan that is due to be complete at the end of this calendar year.

For 175 years, the Naval Academy has met its mission for our Nation. However, we still face many challenges ahead. I believe that our top-notch team of senior leaders, faculty, and staff are prepared to meet these challenges using the same ingenuity, flexibility, and adaptability that has allowed us to continue our mission in the face of a global pandemic.

Thank you for your time today, and thank you for your enduring support of all of our service academies. I am prepared to answer your questions as they are posed. Thank you very much.

[The information follows:]

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COMMITTEE
SUBCOMMITTEE ON
DEFENSE

STATEMENT OF
VICE ADMIRAL SEAN S. BUCK, USN,
SUPERINTENDENT OF THE UNITED STATES NAVAL ACADEMY
BEFORE THE
HOUSE SUBCOMMITTEE
ON
DEFENSE
MARCH 2, 2021

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE

Overview

Chairwoman McCollum, ranking member Calvert, and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today on behalf of the United States Naval Academy (USNA). The Naval Academy's mission is to develop midshipmen morally, mentally, and physically and to imbue them with the highest ideals of duty, honor, and loyalty in order to graduate leaders who are dedicated to a career of naval service. It is imperative that we accomplish this mission with midshipmen in residence, in person. In my professional opinion, you cannot develop leaders online.

The COVID-19 pandemic presented incredible obstacles to achieving that mission over the last 12 months. We had to rapidly adapt our organization to meet the threat of COVID and continue to execute our mission safely and effectively. However, despite these challenges and obstacles presented by the novel coronavirus pandemic, I am pleased to report to you today that USNA is succeeding in its mission of graduating leaders to serve our country.

Despite unprecedented challenges to achieving our mission due to the novel coronavirus pandemic, USNA continued to educate, develop and commission our next generation of leaders for the Navy and Marine Corps on time. This past summer, we successfully commissioned the Class of 2020 with an overall graduation rate of 87.1%, well above the DoD requirement of 75%. Additionally, in 2020, *US News and World Report* ranked USNA the #1 Top Public School of National Liberal Arts Colleges for the second year in a row. And, the Class of 2020 boasted one Marshall and one Churchill scholarship recipient, a further testament to our high-caliber academic program here in Annapolis.

This past summer, we also brought aboard the Class of 2024 for an in-person Plebe Summer experience. They are a talented and enthusiastic cadre of midshipmen from across our nation. They have the third highest SAT/ACT average score and the third highest percentage of students in the top 10% of their high school class in USNA's history. The Class of 2024 also has a record-breaking 30.5% women. With induction of the Class of 2024, USNA is the most diverse it has been in its history and has the highest percentage of women at any time before. We are proud of the resilience and dedication displayed by our newest Naval Academy class, who were inducted in the midst of a pandemic.

COVID-19 Impacts

In March 2020, as the rapid spread of COVID-19 nationwide became a reality, the Naval Academy directed the entire Brigade of Midshipmen to not return to Annapolis from their spring break holiday while we continued to learn more about the nature of this threat. In only two weeks, we shifted our entire academic curriculum to fully-online learning for the first time in Naval Academy history. This was only possible due to the ingenuity and teamwork of our entire academic faculty, Information Technology support staff, and the Brigade. We successfully completed the last month and a half of spring semester fully online in order to meet our goal to graduate and commission the Class of 2020 on time to begin their service in the Fleet. In place of our traditional Commissioning Week activities, the members of the Class of 2020 participated in five small socially-distanced “swearing in” ceremonies in Tecumseh Court at USNA, in the same location they took their Oath of Office on Induction Day. We are proud of the resilience shown by the Class of 2020 as they continued to lead the Brigade from locations spread around the country and of the selflessness and humility they demonstrated in foregoing a traditional commissioning week celebration in Annapolis.

After commissioning the Class of 2020, our next pressing challenge was to safely induct the Class of 2024 in order to ensure we continued to meet our critical accessions requirements for the Navy and Marine Corps. Naval Academy leadership, our medical team, and the leaders of the Classes of 2021 and 2022 worked as one cohesive team to develop and execute a safe and effective in-person Plebe Summer for the Class of 2024. The staff could not rely on decades old protocols and procedures for conducting plebe summer due to the risk of rapid transmission of COVID in how we traditionally executed training for the Plebe Regiment. Instead, the Naval Academy conducted Plebe Summer in small self-contained “pods” of 40-48 plebes and their detailers to accomplish necessary Plebe Summer training while minimizing contact between “pods.” This method of organizing training activities successfully mitigated the spread of COVID-19 between the “pods” when cases arose. Despite the drastic changes to the organizational structure of Plebe Summer, the Classes of 2021 and 2022 detailers provided a challenging and sufficient program for the newest class of Naval Academy midshipmen.

Due to the cancellation of all Fleet supported summer training activities, we elected to conduct a robust and unparalleled online summer school curriculum to help offset the number of credits students would have to take during an unpredictable Fall semester. Over 300 faculty

members instructed courses over the summer to allow 5,900 summer school “seats” to be filled; a normal summer curriculum would serve 750 seats. Many midshipmen were able to reduce their fall course load by one to two classes and move closer to completing their graduation requirements in lieu of the cancelled traditional summer training opportunities.

Our final goal during 2020 was to return the entire Brigade to Annapolis to conduct Fall semester in-person. As stated up front, it is our firm belief at the Naval Academy that you cannot develop leaders online. By the start of fall semester, many of our midshipmen had been away from the Naval Academy for over six months. While we are proud of our success in providing a comprehensive online academic curriculum to students during the spring and summer, we did not feel as though we could translate the leadership and physical development aspects of our mission effectively online.

So, once again, the Naval Academy recalibrated how our most basic operations are conducted in order to keep the entire Brigade safe on the Yard in close proximity during the Fall semester. At the advice of our medical staff, we dedicated the Second Wing of Bancroft Hall, our 4,500-person dormitory, entirely to quarantine and isolation space for midshipmen diagnosed with COVID and “close contacts.” To make up for the lost dormitory space, and in order to further reduce the population density in our communal living spaces, the Naval Academy leased eight dormitories from neighboring St. John’s College in Annapolis, MD to house approximately 375 midshipmen for fall semester. We also shifted all of our meal services to takeaway food service only. And, we outfitted our classrooms with technology to enable hybrid in-person and remote learning simultaneously to reduce in-person class sizes and allow for proper social-distancing.

During the fall semester, based on the advice and close collaboration with the Air Force Academy’s pandemic math team, the Naval Academy instituted a robust COVID-19 surveillance testing protocol, Sentinel Suppression Testing (SST), in order to quickly isolate emerging COVID outbreaks on the Yard. The Naval Academy tested 15% of our faculty, staff, and midshipmen weekly beginning the week of August 30th, 2020. Due to our testing protocols, and the rigorous adherence to social distancing and health protocols, our COVID-19 positivity rates remained extremely low during the Fall semester, and consistently lower than rates in Anne Arundel County and the State of Maryland. Through regular surveillance testing of a random population sample, we were able to see that when our positivity rates did increase on the Yard, it

was tied to periods in which we saw influxes of individuals from outside our protected bubble such as Induction Day and the fall and spring reform of the Brigade. Additionally, our numbers tended to rise in conjunction with prevailing rates in the local community when we permitted midshipmen off-Yard liberty. Accordingly, we determined parameters for off-Yard liberty based upon local community COVID-19 data and our on Yard COVID rates. Additionally, and despite our faculty and staff living in the local community and transiting to and from the Yard each day, we experienced no known transmission of COVID in the classroom environment, a testament to the effectiveness of our social-distancing, cleaning protocols and masking guidelines in our classroom.

In order to enable our physical mission to continue safely, our Naval Academy Athletic Association worked in close collaboration with our medical staff as well as our varsity athletic conferences and the National Collegiate Athletic Association (NCAA) to develop a comprehensive “resocialization of sport” plan to reintroduce physical activity and team sports in the COVID environment. During the fall semester, we safely conducted our fall Physical Readiness Test, individual physical training, as well as 53 intercollegiate athletic events across 17 different sports to include our annual matchup against Army in football. While we wish the score had ended in our favor, we are proud of the teamwork with our fellow service academy, Army West Point, that facilitated the 121st playing of the Army Navy game under unprecedented circumstances at the U.S. Military Academy’s Michie Stadium. We believe our physical mission, particularly intercollegiate athletic competition, instills priceless stamina, grit, resilience and a competitive mindset in our future navy and marine corps officers.

Due to our proven success at controlling COVID-19 spread within our Naval Academy community throughout the Fall semester, we felt safe to reform the Brigade for spring semester in Annapolis after an extended period of winter holiday leave despite high COVID positivity rates around the nation. We have resumed SST as well as commenced vaccinating our faculty and staff in accordance with DoD guidelines as vaccine supplies permit. We hope to commence midshipmen vaccinations in the near future in order to allow for midshipmen to safely participate in summer training without risking the health of our operational Fleet units. We will follow our proven health protocols from the fall semester in order to keep all members of our Naval Academy community safe.

COVID-19 and Mental Health

While demonstrating incredible resilience during the COVID-19 pandemic, the Brigade of Midshipmen is not immune to the mental health struggles the COVID-19 pandemic has exacerbated in many of their peers at colleges across the nation. Our team at the Midshipmen Development Center (MDC), our main provider of mental health counseling for midshipmen, has closely monitored emerging data to assess national trends related to mental health amongst college students throughout the pandemic. In order to continue care for existing clients, and intake new clients during the Brigade's prolonged absence from Annapolis last spring, MDC rapidly transitioned to offering all services, including individual and group counseling, sports psychology, trauma and eating disorders specialty services, and nutritional counseling online. This included navigating the legal and privacy requirements for mental health work across state lines, training all staff in the ethics and best practices of telehealth delivery, and completing telework protocols with HR.

Last spring, the MDC conducted a mental health and resilience survey of the Brigade using validated measures of anxiety, depression, resilience, and a questionnaire to gauge the impact of COVID-19 on various aspects of functioning. With approximately 600 respondents, this information was used to tailor MDC services, coordinate with other activities on the Yard (Chaplains, Midshipmen Affairs Team) and to inform leadership at all levels about midshipmen demands and needs. When the Brigade returned to the Yard for Fall Semester, the MDC conducted a follow up survey. With approximately 700 respondents, the survey indicated increased stress, including feelings of anxiety and depression, but the majority of respondents were coping without significant negative impact. This is likely due to the high rate of self-reported resilience among respondents – over 90% reported normal or high resilience during the first survey, and the number was over 80% at the second survey.

While there were clear indicators of increased distress within the Brigade during this period, our data shows that the majority are coping without significant negative impact. Also, while some did experience increased distress with increased symptoms of anxiety, depression, and difficulty related to maintaining connections and adjusting to online education, we did not see evidence of an increase in mental health *disorders*. Our mental health team is also closely monitoring trends regarding suicidal ideations and hospitalizations during this challenging time and has identified no significant trend upwards in these categories due to the pandemic. The

MDC, our active duty Chaplains, Brigade Medical, and our entire senior leadership team are closely monitoring the mental health of the Brigade and will continue to prioritize their physical *and mental* well-being during this difficult period.

Physics Exam Investigation

The unusual circumstances posed by COVID-19, from our midshipmen's extended time away from the Naval Academy environment to our shift to online and hybrid-learning has posed challenges in maintaining the highest standards of adherence to our moral mission and professional expectations of midshipmen. At this time, we are actively investigating potential irregularities in the administration of the in-person, proctored, computer-based final exam for Physics 1 (SP211), a sophomore-level course. We treat academic integrity very seriously here at the Naval Academy and will ensure we are upholding the highest standards of professionalism and honor regardless of the unusual circumstances posed by COVID-19 to our academic curriculum this year.

Sexual Assault Prevention and Response Program

We must continue this fight and eliminate sexual assault from our institution. Our midshipmen are our future, and they must hold themselves and each other to the high standards we expect. That means eradicating the scourge of sexual assault. We cannot fail.

The Naval Academy must be a visible cornerstone of a values-based naval culture of dignity and mutual respect in which sexual assault is eliminated and never tolerated, where sexual assault survivors receive compassionate support, and where offenders are held accountable. My team and I are fully committed to these important issues, and this program remains at the forefront of my priorities. We continue to build upon our past efforts, improving prevention efforts and strengthening response support for victims of sexual assault and sexual harassment.

To better address challenges with student culture, we established the Midshipmen Affairs Team. This multi-disciplinary organization comprised of leaders from all programs addressing destructive behaviors (including sexual assault, sexual harassment, discrimination, suicide, alcohol misuse and intimate partner violence), has significantly increased collaboration across

the institution and developed a comprehensive prevention plan across all programs for the Brigade.

While we have dedicated significant effort at the senior leadership level to these issues, we realize that this is a midshipmen problem that requires midshipmen solutions. Several seniors in our Computer Science and Information Technology fields of study are working to develop a SAPR App that aims to encourage help seeking, reporting and bystander intervention. Functionality of the application will include links to resources and intervention strategies, as well as a tracking program where friends can discreetly reach out to one another.

We have also strengthened efforts to prepare peer-helping groups to better support the Brigade based on past survey and focus group results. Our midshipmen peer helping groups, consisting of Sexual Harassment and Assault Prevention Education (SHAPE) Peer Educators and Guidance, Understanding, Information, Direction and Education - GUIDEs, received updated training to address concerns and counter inaccurate narratives.

Success in these programs depends on the Brigade trusting their peer leaders. To promote responsibility and accountability among midshipmen leaders, we have partnered with the RAND Corporation to conduct a Pilot Climate Assessment that will allow these young leaders to better identify challenges within their units and give them the opportunity to address climate issues under their leadership. Our partnership with RAND has also resulted in the creation of a new anonymous sexual harassment reporting mechanism. This form is readily available online and affords members anonymity, if desired. This option augments the traditional reporting mechanisms already in place and we believe will encourage increased reporting of incidents of sexual harassment from active bystanders and from those who prefer not to be identified.

Our Response staff has made a concerted effort to publicize the Catch a Serial Offender (CATCH) Program, and we have noted increased program use as a result. Additionally, the Naval Academy has implemented a Safe to Report policy, which aims to eliminate collateral misconduct as a barrier to reporting incidents of sexual assault.

In close coordination with the U.S. Air Force Academy, we successfully executed the first transfer of a survivor of sexual assault to another Military Service Academy. These groundbreaking efforts will help shape the enduring policy currently being developed by a cross-service working group.

While the Naval Academy has made significant progress within the SAPR Program, we know there is room for continued growth. Accordingly, we are currently engaged in a two-year partnership with the National Opinion Research Center to create and implement an outcome evaluation of our education program's effectiveness. We feel more responsible than ever not only to ensure that every member of the Brigade of Midshipmen can flourish in an environment of dignity and respect, but also to prepare them to better lead Sailors and Marines in the fleet that come directly from that society we are entrusted to protect.

Diversity & Inclusion

The racial justice movement in America during summer of 2020 impacted many members of our Naval Academy community and the events of this past summer have provoked important conversations regarding diversity, equity, and inclusion on campus. While we are proud of our diversity and inclusion efforts, these conversations revealed there is continued work to be done at the Naval Academy in these areas so that we can attract, retain, and develop a diverse cadre of future Navy and Marine Corps officers who are resilient, innovative, and equipped to lead in a highly diverse, social complex, multi-generational workforce.

Our efforts on campus are in line with Chief of Naval Operations (CNO) Admiral Gilday's Culture of Excellence and Task Force One Navy (TF1N) initiatives which strives to identify and root out systemic biases in our force's policies and practices. As part of this Navy-wide program, the Naval Academy stood up Task Force USNA (TFUSNA) to identify and address any instances of systemic bias to include hiring and admissions practices; midshipmen, faculty, and staff performance evaluations; conduct and honor adjudication results; faculty, staff, and midshipmen leadership position distribution; recognition; and healthcare access. This initiative is being led by our Office of Diversity, Equity, and Inclusion (ODEI) in partnership with our Stockdale Center for Ethical Leadership.

In addition to these top down efforts led by CNO Gilday, many members of our Naval Academy community stepped up to initiate movements from within our organization. Our 2030 U.S. Naval Academy Strategic Plan, formulated by stakeholders from across the institution, emphasizes the long-term importance of diversity and inclusion to our mission at the Naval Academy from recruiting and retaining diverse midshipmen, faculty, and staff to identifying and addressing systemic biases.

Our midshipmen have also taken the lead on many diversity and inclusion initiatives, demonstrating ownership in the culture of the Brigade. For the first time, USNA appointed a midshipman Brigade Dignity and Respect Officer whose role includes fostering an inclusive campus that treats midshipmen with dignity, honor and respect. The midshipmen also stood up a cadre of Diversity Peer Educators (DPE) this year who will serve as diversity and inclusion practitioners and subject matter experts for information and support on topics surrounding race, ethnicity, gender identity, and sexual orientation. DPEs undergo initial training as well as monthly follow-on training which they can use to continue to educate their companies, teams, and organizations on the Yard and serve as a trusted peer advisor and mediator within Bancroft Hall.

Our athletic department organized the Naval Academy Athletic Association (NAAA) Council on Racial Equity (CRE) to facilitate efforts for varsity athletes, coaches, administrators, and staff to promote racial equity and inclusion in the NAAA programs and teams within the USNA environment. This council includes athletic administrators, coaches, a sports psychologist, and athletes and encourages midshipmen actions that promote social consciousness within the locker room and the Brigade of Midshipmen. Our football team has leveraged their role as visible campus leaders to host roundtable discussions with local and state law enforcement personnel, open forums with faculty and alumni.

Sea Level Rise

While our attention has been inevitably focused on the near-term threat of COVID-19 to the health and safety of our organization, we have not lost sight of the long-term existential threat that climate change and sea level rise pose to our continued operations here in Annapolis in the centuries ahead. Located at the confluence of the Severn River and Chesapeake Bay, the Naval Academy is vulnerable to storm surge associated with major weather events and localized, high-tide flooding that is exacerbated by sustained easterly or southerly winds. Since 1929, the relative sea level in Annapolis has risen slightly more than one foot, which has significantly increased the occurrences of nuisance flooding from 2-3 times per year to 30-40 times per year and left USNA more vulnerable to major storms such as Hurricane Isabel in 2003. Recovery following that destructive hurricane took well over a year and cost over \$120M. Impacts from storm surges and high-tide flooding affect daily operations through closures of roads, sidewalks

and building entry points. With greater frequency and increased amounts of water, the negative impacts are being increasingly felt throughout Naval Academy operations. Long-term, without future action, many of USNA's buildings and historic infrastructure as well as the effective execution of the Academy's mission are at risk.

Generated primarily by glacier and ice sheet loss and thermal expansion of the ocean due to warming from the sun and the atmosphere, and exacerbated by the subsidence of land mass in the mid-Atlantic region, local or relative sea level rise in the Annapolis area is expected to continue well into the future. The Naval Academy established its Sea Level Rise Advisory Council (SLRAC) in 2015 to provide analysis, guidance and recommendations on issues surrounding sea level rise, with specific focus on the impacts to operational requirements of the Academy. The SLRAC focused on recent interagency, peer-reviewed studies and consulted with several subject matter experts. The studies are generally consistent in terms of the range of 21st century sea level rise values associated with stabilized and growing greenhouse gas emissions scenarios, with the differences between the stabilized and growing emissions scenarios not pronounced until the latter half of this century.

Based on the recommendations of the SLRAC, which worked in coordination with the City of Annapolis, I believe it is prudent to plan for Mean Sea Level (MSL) rise values associated with a growing emissions scenario (the interagency "Intermediated scenario from the 2017 National Climate Assessment) for projects with a relatively low risk tolerance. For this scenario, the 50% probability elevations above the currently defined mean sea level in Annapolis are approximately 1.8 ft in 2050, 3 ft in 2075, and 4.4 ft in 2100. Under this Intermediate scenario, an average high tide (Mean High Water) would reach the threshold for flooding of low-lying roads daily at the Naval Academy by 2050. In planning for flood protection measures, periodic storms should be considered in addition to MSL rise. The Naval Academy has adopted the following estimates for extreme water levels associated with storms: 1-year storm (2.4 ft), 10-year storm (3.7 ft), 50-year storm (5.2 ft), and 100-year storm (5.8 ft). These storm tide values are relative to MSL, so they must be added to future sea level rise projections. As an example, the water level of an annual flooding event (i.e., associated with a 1-year storm) would reach 4.2 ft above the currently defined MSL (1.8 ft sea level rise plus 2.4 ft storm tide) by 2050, sufficient to flood the parking lots in the center of the campus, and 6.8 ft above the current MSL by 2100, which would produce flooding similar to Hurricane Isabel. These recommended sea level rise

and storm tide projections are consistent with those contained in the recently released DoD Regional Sea Level Rise database.

Since Hurricane Isabel in 2003, the Naval Academy, in partnership with the Army Corps of Engineers, has developed and implemented several mitigation strategies to address major storms and stormwater surge. These have included flood resistant design and construction of two recent major infrastructure projects (Hopper Hall and Wesley Brown Field House), installation of temporary door and window dams during flooding threats, and stormwater repairs to control recurring storm and tidal flooding at various locations on the campus.

The challenges associated with rising tidal conditions, land subsidence and storm water management have my full attention and the Academy is working on a plan to address the associated infrastructure and operational risks. As directed by the FY19 NDAA, the installation is currently undertaking a major, long-term planning effort to develop a Military Installation Resilience Plan. Serving as a Naval Facilities Engineering Command (NAVFAC) Headquarters Pilot, the plan is being developed through a joint effort between Commander, Naval Installations Command, NAVFAC, Naval Support Activity Annapolis, USNA and the City of Annapolis. By the end of 2021, the full plan will be complete, providing a course of action and a year-by-year execution strategy to cohesively address and mitigate the combined effects of land subsidence, sea level rise, ground water change, coastal flooding/storm surge and inadequate stormwater management at USNA. Courses of action will likely include a mix of approaches: structural (seawalls, stormwater retrofits); natural (earthen berms/levees, living shorelines); non-structural (change land use); and temporary solutions to issues where long-term permanent projection may take years to implement. The development of this plan is a significant step forward for us as we look to the future of the Naval Academy and our ability to effectively execute our mission.

Conclusion

For 175 years, the Naval Academy has met its mission as the premier accession source for Navy and Marine Corps officers in the nation. Our four-year immersion program is designed to produce leaders of character and consequence for our Fleet. We believe that this character development process can only occur fully and effectively here in Annapolis, in-person, when our midshipmen are leading or being led by their peers, and developed and influenced by our world class faculty and staff. This is why, despite the challenges and risks posed by the COVID-19 pandemic, we returned the full Brigade of Midshipmen to Annapolis as soon as was safely

possible. We are proud of our ability to accomplish our academic mission remotely this spring, but we are most proud of the efforts of our entire faculty and staff that created the conditions to safely return the Brigade to campus and execute our mission in-person during the 2020-2021 Academic Year.

The Naval Academy still has great challenges ahead from continuing to combat COVID-19, to creating a more diverse and inclusive campus environment, to preparing our physical infrastructure for the imminent threat posed by sea level rise. I believe that our top-notch team of senior leaders, faculty, and staff are prepared to meet those challenges using the same ingenuity, flexibility, and adaptability that has allowed us to continue our mission in the face of a global pandemic. We are proud of our legacy at the Naval Academy and are prepared to continue to develop leaders our nation can be proud of for another 175 years here in Annapolis.

Thank you again for the opportunity to appear before you today on behalf of the United States Naval Academy. I would also like to thank the members of this subcommittee for their support of our Military Service Academies; both in terms of the funding we receive to execute our vital missions, but also for your personal efforts in nominating quality candidates from your respective districts as prospective cadets and midshipmen. We would be honored to support you or your staff for a tour of the Naval Academy and visit with midshipmen, as your schedules permit. I look forward to your questions.



Vice Admiral Sean Buck

Superintendent, U.S. Naval Academy



Vice Adm. Sean Buck is a native of Indianapolis, Indiana. He is a graduate of the U.S. Naval Academy and received his commission in 1983. He was designated a naval flight officer in 1985. He earned a Master of Arts in International Security Policy from George Washington University and has completed studies at the College of Naval Command and Staff, U.S. Naval War College, and the Armed Forces Staff College; a fellowship with the Massachusetts Institute of Technology's Seminar XXI: Foreign Politics, International Relations, and the National Interest; and executive certificate programs at both the Harvard Kennedy School and Harvard Graduate School of Education.

As a flag officer, Buck has served as commander, Patrol and Reconnaissance Force with U.S. 5th and 7th Fleets, Fleet Air Forward, Patrol and Reconnaissance Group; chief of

staff, Strategy, Plans and Policy (J5), the Joint Staff; Director, 21st Century Sailor Office, where his portfolio included the Navy's programs on sexual assault prevention and response, suicide prevention, alcohol abuse, and other destructive behaviors; and most recently he served as commander, U.S. Naval Forces Southern Command/U.S. 4th Fleet.

Flying the P-3C Orion, Buck's early at-sea operational tours were with the "Fighting Marlins" of Patrol Squadron (VP) 40; a disassociated sea tour aboard USS Theodore Roosevelt (CVN 71) as the catapult and arresting gear division officer; and a department head tour with the "Tridents" of VP-26. He subsequently commanded VP-26 and Patrol and Reconnaissance Wing 11.

His shore and staff assignments include Air Test and Evaluation Squadron (VX) 1; Bureau of Naval Personnel; Joint Staff J3; Office of the Chief of Naval Operations staff as executive assistant to the deputy chief of Naval Operations (CNO) for Warfare Requirements and Programs (N6/N7); and as the deputy director for operations in the Strategy and Policy Directorate (J5), U.S. Joint Forces Command. Prior to

major command, Buck completed an interim assignment with the National Reconnaissance Office; he is a member of the Navy's Space Cadre.

He also completed a special assignment as a senior fellow on the CNO's Strategic Studies Group in Newport, Rhode Island, an innovation think tank for the Navy. Buck became the 63rd superintendent of the U.S. Naval Academy on July 26, 2019.

Buck's personal awards include the Distinguished Service Medal, Defense Superior Service Medal (two awards), Legion of Merit (five awards) and various other personal, unit and service awards. He is most proud of his various unit awards that reflect credit on the successful teams he has served with and the many skilled professionals he has been privileged to work alongside.

SUMMARY STATEMENT OF LT. GENERAL CLARK

General CLARK. Chairwoman McCollum, Ranking Member Calvert, and other distinguished members of the committee, good morning from the United States Air Force Academy. And thank you to my fellow superintendents for your statements. I am grateful for this opportunity to update you on some of our recent successes and to share some of the obstacles we face in the coming years.

Thank you for all that you do to support our cadets and to enable the mission success of not only our academy but our air and space forces as well. The interest and support of this committee is greatly appreciated, and I look forward to our discussion today.

About 5 months ago, it was my great honor to take command of the institution I am proud to call my alma mater. Nearly four decades ago, as a cadet at the United States Air Force Academy myself, I found my purpose and established a foundation of character and service that I could not have built anywhere else.

I have returned as superintendent to an academy on an outstanding trajectory but also one facing great challenges, some unique to our mission and others that we share with other campuses, our fellow service academies, and communities across our country.

In these initial months, I laid out priorities that seek to recognize and overcome not only the challenges we face at our academy but also those that our graduates will soon encounter as decision-makers in an era of great-power competition and rapid change.

My first priority is one that is fundamental and unwavering, even as the world changes around us: We will continue to develop leaders of character. Character is the cornerstone of leadership and should be the hallmark of an academy graduate. Each element of our mission must remain aligned with the moral compass that character provides. Without a commitment to character, the leadership foundation we build here will not be strong enough to support the weight of our goals and ambitions.

My second priority is our immediate tactical challenge and one of the toughest our academy has ever faced: We must defeat COVID-19. I am proud that our response to this crisis is utilizing the amazing brainpower we have within our faculty, our staff, and our cadets. Trusting the science, putting our math skills to work, and strict adherence to guidelines will be our continued approach. And the health and safety of our entire community will remain at the center of our decision-making process. Some of us may be done with COVID-19, but COVID-19 is not done with us.

Third, we must prepare leaders who will fight and win in future conflicts. These conflicts will look different than any of those experienced by any of us today. We are in an era where our freedom to operate in the air and space cannot be taken for granted. As our Air Force chief of staff, General Charles Brown, stated, we must accelerate change or lose. Our academy will do just that, developing innovative, creative, and bold thinkers and leaders prepared to solve the unknown problems of tomorrow.

Finally, we must foster a culture of dignity and respect. This will not only make our campus a better place to work, live, and learn,

but it also is a strategic imperative for our Air Force and our Space Force.

The cadets on our campus form the most diverse classes we have ever had at our academy, and they will lead increasingly diverse airmen and guardians. They must enable and empower the diversity of thought that can be derived from this uniquely American strength. They must also be able to relate to and thrive in partnerships with other cultures and allied nations in increasingly collaborative combat operations.

If dignity and respect is not engrained in our culture, we will not only fail in these collective efforts, but we will also fail in the proper development of future leaders.

In the longer statement submitted for the record, I have elaborated in greater detail on some of the programs, initiatives, and actions that we have taken or will take to implement these priorities. I am proud of our direction and am fully confident in the skills and abilities of our cadets, faculty, and staff, but there are areas where we still have work to do to uphold the high standards that our society rightfully expects of us.

Our 4,221 cadets, 206 preparatory school cadet candidates, and the infrastructure that makes up our campus represent a critical investment in the future of our national security. I welcome the opportunity to discuss how we can ensure our mission success together.

Thank you, and I look forward to your questions.

[The information follows:]

Department of the Air Force



Presentation

Before the House Appropriations
Subcommittee on Defense

United States Military Academies Overview

Witness Statement of
Lieutenant General Richard M. Clark
Superintendent of the United States Air
Force Academy

March 2, 2021

Not for publication until released by the House Appropriations
Subcommittee on Defense

United States Military Academy Overview

March 2, 2021



BIOGRAPHY



UNITED STATES AIR FORCE

LIEUTENANT GENERAL RICHARD M. CLARK

Lt. Gen. Richard M. Clark is the Superintendent, U.S. Air Force Academy, Colorado Springs, Colorado. He directs a four-year regimen of military training, academics, athletic and character development programs leading to a Bachelor of Science degree and a commission as a second lieutenant in the United States Air Force or United States Space Force.

Lt Gen Clark graduated from the U.S. Air Force Academy in 1986. His commands include the 34th Bomb Squadron, Ellsworth Air Force Base, South Dakota; 12th Flying Training Wing, Randolph AFB, Texas; 8th Air Force, Barksdale AFB, Louisiana and Joint Functional Component Commander for Global Strike, Offutt AFB, Nebraska. He has also served as a White House Fellow in Washington, D.C.; the Commandant of Cadets, U.S. Air Force Academy, Colorado; Senior Defense Official/Defense Attaché, Cairo, Egypt and as the Commander, 3rd Air Force, Ramstein Air Base, Germany.

Prior to his current assignment, he served as the Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration, Headquarters U.S. Air Force, the Pentagon, Arlington, Virginia.



EDUCATION

1986 Bachelor of Science, Management, U.S. Air Force Academy, Colorado Springs, Colo.
 1991 Distinguished Graduate, Squadron Officer School, Maxwell Air Force Base, Ala.
 1994 Master of Arts, Human Resource Development, Webster University, St. Louis, Mo.
 1996 Distinguished Graduate, U.S. Air Force Weapons School, Ellsworth AFB, S.D.
 1998 Distinguished Graduate, Master of Strategic Studies, Naval Command and Staff College, Naval War College, Newport, R.I.
 1999 Master of Airpower Studies, School of Advanced Air and Space Studies, Maxwell AFB, Ala.
 2005 Distinguished Graduate, Master of National Security Studies, National War College, Fort Lesley J. McNair, Washington, D.C.
 2006 National Security Managers Course, Syracuse University, N.Y.
 2010 U.S.-Russia Security Program, Harvard University, Cambridge, Mass.
 2014 Joint Flag Officer Warfighting Course, Maxwell AFB, Ala.
 2015 Joint Force Air Component Commander Course, Maxwell AFB, Ala.
 2017 Pinnacle Course, National Defense University, Fort Lesley J. McNair, Washington, D.C.

United States Military Academy Overview

March 2, 2021

ASSIGNMENTS

1. May 1986–February 1987, Junior Varsity Football Coach and Candidate Counselor, U.S. Air Force Academy, Colorado Springs, Colo.
2. February 1987–February 1988, Student, Undergraduate Pilot Training, Laughlin Air Force Base, Texas
3. February 1988–November 1991, EC-135 Pilot, 2nd Airborne Command and Control Squadron, Offutt AFB, Neb.
4. November 1991–November 1994, B-1 Pilot, 28th Bomb Squadron, McConnell AFB, Kan.
5. November 1994–July 1997, B-1 Instructor Pilot, B-1 Flight Training Unit, 28th BS, Dyess AFB, Texas
6. July 1997–June 1998, Student, Naval Command and Staff College, Naval War College, Newport, R.I.
7. June 1998–June 1999, Student, School of Advanced Air and Space Studies, Maxwell AFB, Ala.
8. June 1999–August 2000, Action Officer, Air Force Office of Legislative Liaison, the Pentagon, Arlington, Va.
9. August 2000–August 2001, Fellow, President's Commission on White House Fellowships, Washington, D.C.
10. August 2001–May 2002, Assistant Director of Operations, 77th BS, Ellsworth AFB, S.D.
11. May 2002–May 2004, Commander, 34th BS, Ellsworth AFB, S.D.
12. May 2004–June 2005, Student, National War College, Fort Lesley J. McNair, Washington, D.C.
13. June 2005–January 2006, Vice Commander, 12th Flying Training Wing, Randolph AFB, Texas
14. January 2006–March 2008, Commander, 12th FTW, Randolph AFB, Texas
15. April 2008–April 2009, Director, Joint Interagency Task Force - Iraq, Multi-National Force - Iraq, Baghdad, Iraq
16. May 2009–July 2010, Vice Commander, Eighth Air Force (Air Forces Strategic), Barksdale AFB, La.
17. July 2010–August 2012, Commandant of Cadets, U.S. Air Force Academy, Colorado Springs, Colo.
18. August 2012–August 2014, Senior U.S. Defense Official; Chief, Office of Military Cooperation; and Defense Attaché, Cairo, U.S. Central Command, Cairo, Egypt.
19. August 2014–April 2015, Vice Commander, Air Force Global Strike Command, Barksdale AFB, La.
20. April 2015–October 2016, Commander, 8th Air Force (Air Forces Strategic), Barksdale AFB, La., and Joint Functional Component Commander for Global Strike, U.S. Strategic Command, Offutt AFB, Neb.
21. October 2016–October 2018, Commander, Third Air Force, Ramstein Air Base, Germany
22. October 2018–August 2020, Deputy Chief of Staff, Strategic Deterrence and Nuclear Integration, Headquarters U.S. Air Force, the Pentagon, Arlington, Va.
23. September 2020–present, Superintendent, U.S. Air Force Academy, Colorado Springs, Colo.

SUMMARY OF JOINT ASSIGNMENTS

1. April 2008–April 2009, Director, Joint Interagency Task Force - Iraq, Multi-National Force - Iraq, Baghdad, Iraq as a colonel.
2. August 2012–August 2014, Senior U.S. Defense Official; Chief, Office of Military Cooperation; and Defense Attaché, Cairo, U.S. Central Command, Cairo, Egypt, as a brigadier general.
3. April 2015–October 2016, Joint Functional Component Commander for Global Strike, U.S. Strategic Command, Offutt Air Force Base, Neb., as a major general.

FLIGHT INFORMATION

Rating: Command pilot
 Flight hours: More than 4,200, and 400 combat hours
 Aircraft flown: B-1, EC-135, KC-135, T-1, T-38, T-6 and C-21

MAJOR AWARDS AND DECORATIONS

Distinguished Service Medal with oak leaf cluster
 Defense Superior Service Medal
 Legion of Merit with oak leaf cluster
 Distinguished Flying Cross
 Bronze Star Medal with oak leaf cluster
 Meritorious Service Medal with two oak leaf clusters
 Air Medal with two oak leaf clusters
 Aerial Achievement Medal
 Air Force Commendation Medal with oak leaf cluster
 Combat Action Medal
 Nuclear Deterrence Operations Service Medal

OTHER HONORS

Honorary Doctorate, University of Maryland Global Campus

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EFFECTIVE DATES OF PROMOTION

Second Lieutenant May 28, 1986

First Lieutenant May 28, 1988

Captain May 28, 1990

Major Sept. 1, 1997

Lieutenant Colonel May 1, 2000

Colonel Aug. 1, 2004

Brigadier General Nov. 18, 2009

Major General June 4, 2013

Lieutenant General Oct. 21, 2016

(Current as of Sept 2020)

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Introduction

Chairwoman McCollum, Ranking Member Calvert, and other distinguished members, thank you for the opportunity to address this committee on behalf of the United States Air Force Academy (USAFA). I am grateful to share some of our latest updates and successes, but also to inform you of some of the obstacles we are facing as well as those we anticipate in the years to come. The interest, counsel, and support of this committee is greatly appreciated, as each of our service academies strive for success in the crucial mission we all share: developing the leaders of character who will shape the future of our national defense and reinforcing the strength and effectiveness of our respective services.

About six months ago it was my great honor to take command of the institution I am proud to call my alma mater. As a cadet at the United States Air Force Academy I found my purpose and established a foundation of character and service that I could not have built anywhere else. I have returned as Superintendent to find an Academy on an upward and ambitious trajectory, but also one facing great challenges – some unique to our mission, and others that we share with campuses and communities across our country. In these initial months, I laid out priorities that seek to recognize and overcome not only the challenges we face at our Academy, but also those that our graduates will soon encounter as decision-makers in an era of great power competition and rapid change.

Priorities

In the nearly four decades since I first arrived on this campus as a basic cadet, our society, the technologies we employ, and the ways we conduct warfare have changed significantly, and in some ways, so too has our Academy. We will continue to embrace

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purposeful change and evolve to maintain relevance and effectiveness, but my first priority is one that is fundamental and unwavering even as the world changes around us: **we must continue to develop leaders of character.** Character is the cornerstone of leadership, and should be the hallmark of an Air Force Academy graduate. Our academic, military, and athletic training, and culture and climate initiatives will remain aligned with the moral compass that character provides. We must also recognize that how we teach and develop character must continue to evolve so that the progress of each graduating class builds upon the previous. Without this steadfast commitment to character, the leadership foundation we establish here will not be strong enough to support the weight of our goals and ambitions.

My second priority is our immediate tactical challenge, and one of the toughest our Academy has ever faced: **we must persevere and defeat COVID-19.** Focusing on the health and safety of our cadets, the Academy, and our greater community will continue to be at the center of our decision-making process. I am proud of how our Academy has responded to this crisis and continues to lead the way in this tough battle by utilizing the amazing brainpower we have within our faculty, staff, and cadets. Trusting the science, employing our mathematical expertise, and adhering to guidelines will continue to be our approach. Some of us may be done with COVID-19, but COVID-19 is not done with us. Now is not the time to lose focus – it is a time for continued vigilance.

Third, **we must prepare leaders who will fight and win in future conflicts** that will look very different than those experienced by any of us speaking today, even with our many collective years of military experience across our respective services. While COVID-19 is an alarming and historic challenge, we are also in an era of great power competition, where our freedom to operate in the air and in space cannot be taken for granted. As our Air Force Chief of

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Staff, General Charles Q. Brown, Jr., stated, we must “accelerate change or lose.” Our Academy will do just that, developing innovative, creative, and bold thinkers and leaders, prepared to solve the unknown problems of tomorrow.

Finally, in our approach to all that we do at our Academy, **we must ensure that respect and dignity for all permeates throughout our culture.** This emphasis not only reinforces a climate that makes our campus a better place to live, work, learn, and serve, but it is also a strategic imperative for our Air and Space Forces. Our cadets come from increasingly diverse communities across our nation, and our graduates must be prepared to lead increasingly diverse Airmen and Guardians. Our graduates must enable and empower the diversity of thought that can be derived from this uniquely American strength. They must be able to relate to other cultures and excel in partnerships and coalitions with allied nations as we navigate the complexities of expanding joint and collaborative combat operations. In order to outpace and outthink our adversaries, we must fully employ the diverse creative, innovative, and problem-solving capabilities of our people. If dignity and respect is not ingrained in our culture, we will not only fail in these collective efforts, but we will also fail in the proper development of future leaders.

COVID-19

Each class that graduates from the United States Air Force Academy, including my own Class of 1986, prides itself on the quality of their cohort and the unique difficulties they overcame together in a program of academics, military training, athletics, and character development that is among the most challenging offered on any campus across our nation. Despite this friendly class rivalry, from my perspective leading our Academy as we confront COVID-19, there has never been a more difficult time for cadets to work through our

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transformative program. For our more junior cadets in particular, their experience thus far looks much different than what they envisioned when they accepted appointments to come here. Across the Cadet Wing, our future officers are receiving real-life leadership and character-building lessons that transcend the typical training environment, and are incomparable to the experiences of past graduating classes.

I am proud of the perseverance and determination our cadets have displayed over the last year, but the incredible talent and tireless efforts of our faculty and staff have enabled our mission to continue. I cannot overstate it – they have gone above and beyond and have modeled the kind of selfless service that we want our cadets to embody in their future careers. To safeguard our cadets and community last spring, in two firsts for our Academy, we sent our lower three classes home early, and graduated the Class of 2020 a month ahead of schedule. In another historic first, the Class of 2020 included 86 graduates who entered the United States Space Force – our first graduates to enter the nation’s newest service branch. To facilitate the completion of the Spring Semester, our faculty converted all classes to a 100% remote environment in only 9 days.

This past July, the Secretary of Defense designated all accession sources and military training pipelines as mission essential. Our Academy is one of those key Air and Space Force accession sources, and we became one of the first universities in the nation to have its entire student body return to campus. We safely brought the Cadet Wing back to our campus in phases and redesigned our courses for the Fall Semester to be flexible based on changing and unpredictable conditions. These efforts allowed us to welcome the Class of 2024 to the Academy for an on-time Inprocessing Day, and to successfully complete Basic Cadet Training.

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Across our campus community, we have confronted continuously shifting conditions with flexibility and innovative solutions. In order to create space to allow for appropriate Quarantine and Isolation (Q&I) areas, we contracted with a few local hotels not far from our gates to house approximately 400 healthy cadets. At present, we have been able to reduce that number to 135 first-class (senior) cadets residing at hotels as COVID-19 positivity rates have decreased. Accordingly, we adjusted academic, athletic, and special event schedules in order to limit the risk of exposure to our cadets and Academy community. Similar to our local community and other parts of the nation, we experienced an increase in COVID-19 cases last November. We anticipated this situation and had a plan in place to implement stricter protocols and restrictions for our cadets in order to limit community spread. As a result of following our coordinated procedures, we were able to significantly reduce the number of positive cases, send the vast majority of the Cadet Wing home for the holiday break in December as scheduled, and again bring them back to campus in phases before beginning the Spring Semester. In order to limit the risks associated with additional travel, we have canceled Spring Break and have instead scheduled additional time off for cadets throughout the Spring Semester in the form of extended three-day weekends.

The Pandemic Math Team (PMT) has been one of our greatest enablers of our continued mission success. They are a multidisciplinary group of experts and professionals who have put the brainpower of our faculty and staff to work. The team consists of 14 PhDs in statistics, data analytics, mathematical modelling, and engineering; eight PhDs in biology, virology, and biochemistry; and five M.D.s and public health professionals. Together, they assess the threat of COVID-19 and develop risk-characterized policy options and testing strategies. PMT models have provided forecasts for COVID-19 case counts and expected Q&I volume. Additionally,

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their analysis has driven the methods of our surveillance testing, which employs a pooled testing protocol developed at our Academy to effectively and efficiently test a large volume of cadets, faculty, and staff with minimum use of testing resources. We have demonstrated the ability to test over 700 cadets in a day with diagnostic results in fewer than six hours.

We have shared the lessons and protocols from our pooled testing with the Air Force Surgeon General, and some of these lessons-learned are currently being adapted for use at other Air Force installations. We continue to refine our models and update COVID-19 policies and protocols based on data from surveillance testing. The fact that approximately 90% of cadets who test positive for COVID-19 are asymptomatic underscores the importance for continued surveillance testing to identify and respond to new cases as early and quickly as possible. In early January, we began administering our first COVID-19 vaccinations to Tier 1a and 1b personnel. We developed a web-based questionnaire to capture the prioritization of our personnel, which is based on the Department of Defense established schema. The online program enables our medical team to rapidly generate a list of personnel who are ready to accept the vaccine when shipments arrive. Depending on availability, we have been able to execute Point of Dispensing (POD) operations in our hockey arena. As of February 22, 2021, we have administered a first vaccine dose to 2,515 personnel, both doses to 1,209 personnel, and anticipate a new vaccine shipment every other week.

This collaborative approach to COVID-19 has been an immense effort requiring the dedication of every unit on our installation, and I am incredibly proud of how our cadets, faculty, and staff have responded. They have been a model of the kind of grit and determination, coupled with ingenuity and intellect, which our nation should expect of leaders in its Air and Space Forces. There is no question, however, that the challenges of this current environment can take a

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toll on our mental health – cadets, faculty, staff, and leadership alike. We have a wide range of resiliency resources and helping agencies available to our cadets and Academy community, allowing us to focus appropriate attention on cadets in Q&I, and mitigate the added challenges and adverse effects of this environment on 4-degree (freshmen) resilience and integration, among other difficulties unique to military service academies. It is a strength, not a weakness, to seek help, and at our Academy I will not accept any kind of cultural stigma being placed on those who have the courage to reinforce their mental well-being.

Our ongoing fight against COVID-19 has also been enabled by your support, and the support of the American people. On behalf of our entire Academy community, I would like to extend our thanks for the generous funding assistance we received in FY2020 to aid in our efforts to safeguard the health of our cadets, faculty, and staff. Without this support we would not have been able to safely achieve continued mission success.

Honor

The mission of the United States Air Force Academy is to educate, train, and inspire men and women to become leaders of character, motivated to lead the Department of the Air Force in service to our nation. While COVID-19 has presented numerous obstacles to how we maintain our high standards and accomplish this crucial mission each day, the historic challenges we have confronted with this global pandemic will in the end prove temporary. How we approach living, working, learning, and defending our nation with our honor intact has a more fundamental and long-term consequence for the development of the officers who will soon lead our Air and Space Forces. Tactical challenges are a fact of military life and often influence our key decision-making processes, but short-term actions cannot come at the expense of strategic plans and

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priorities, or undermine our approach to something as foundational to our culture as our Honor Code: *"We will not lie, steal, or cheat, nor tolerate among us anyone who does."*

After our Academy made the unprecedented decision in March to send the lower three classes home, amidst these uncommon circumstances and challenges, the Dean of Faculty detected an increase in infractions through various academic safeguards. These infractions included various forms of cheating during the Spring Semester, ranging from failing to properly cite sources, to using unauthorized online tutoring websites to receive exam solutions in real time, to cadets coordinating responses to exam questions. Although some of these infractions unfortunately do occur even in a traditional learning environment, the remote learning environment increased the temptation and availability of means to cheat. This was a phenomenon that occurred not only at our Academy, but at universities across the country that also grappled with a rapid transition to remote learning. In total, 240 cadets were suspected of violating the Academy's Honor Code during this timeframe.

The cadet-led process of working through these Honor Code infractions could not begin until cadets returned for the Fall Semester. We continue to progress through these cases, and we are dedicated to ensuring cadet accountability throughout the entire Honor process. The vast majority of cadets have admitted to cheating and were placed on six months of Honor probation and remediation. The remainder are pending cases at various stages of the Honor process. Cadets in violation of the Honor Code are not allowed to represent our Academy until they complete the required remediation. Remediation is a consequence and not an act of leniency. If earned, it provides an opportunity to reset the moral compass and deepen a cadet's understanding of and respect for the Honor Code.

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The men and women at our Academy come from all walks of life, across all 50 states, 435 congressional districts, and a number of our allied partners around the world. You yourselves have nominated many of them. We recognize that when they step foot on our campus for the first day of Basic Cadet Training, they do not automatically develop the character we expect of them. They come to us with years of prior training and examples on what honor and character mean – from their parents, peers, teachers, the media, and other influences throughout our society. Some of that training is positive, and some of it is negative. Our challenge is to identify flaws in character and honor, and, if possible, to educate the cadets on what is expected of them. Adhering to shared values and a higher standard does not happen overnight – it is a four-year process. If during our efforts to develop their character they have demonstrated that they are unwilling or unable to meet our standards by the time they commission, we will make the hard decision to disenroll them. If, however, we are confident in their potential for rehabilitation, we will use tools such as probation and remediation to provide course correction. Fortunately, probation and remediation have proven to be effective tools, where more than 90% of cadets who go through remediation do not commit another Honor Code infraction.

In light of these incidents and my strong belief in the crucial importance of honor to the development of our cadets and the future of our military, I directed a review of our entire honor program in January. To conduct this examination, the Honor Review Committee will work in partnership with Air Force CyberWorx, the Air Force's lead problem-solving unit, which we host here at our Academy. This Committee is conducting a holistic review of the program and is holding discussions with senior leaders, cadets, alumni, and other stakeholders to see if and how we can improve the honor system. The Committee is reviewing tenets of the current Honor Program, previous honor assessments, studies, reports, and surveys. They are also examining

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internal processes, structures, and activities associated with the Honor Program. The purpose of this review is to provide findings and recommendations for improvement, ensuring the Cadet Honor Code and Honor Program remain relevant and effective.

As we anticipate the results of the assessment, we continue to evaluate and update temporarily remote academic programs, implementing lessons learned to deter future violations. These efforts include enhanced use of technology to monitor for plagiarism, and real-time monitoring of websites to identify unauthorized information sharing. In addition, we are continuing to refine our approach to remote learning, and our faculty developed supplemental course content and resources for cadets. The Honor Code is not only foundational to the Air Force Academy, but it serves as a guide for cadets to live an honorable life, whether serving in uniform or not. This review will help us ensure that living honorably remains the cornerstone of the Academy, where every cadet upholds our Honor Code.

Sexual Assault Prevention and Response

Even one incident of sexual assault or sexual harassment at our Academy is unacceptable. Any prevalence of these degrading behaviors is corrosive to the high standards we hold ourselves to as leaders, the core values of our Air and Space Forces, and our Academy. We are not where we need to be, and we must get this right. The strength of our Air Force depends on eradicating sexual assault.

The results of the 2018 Service Academy Gender Relations Survey (SAGR), which provides information on the prevalence of sexual assault and sexual harassment, showed a significant increase in sexual assaults at each of the military service academies. We continue to explore and implement evidence-based programs and policies that are designed to reduce risk

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factors and improve protective factors for our cadets, Airmen, and Guardians. Since the release of the 2018 Sexual Harassment & Violence (SH&V) Report, the Academy has improved the capacity for victims to access care and make official reports of sexual assault. Reporting here has remained steady despite the COVID-19 protocols enacted this year. We must continue to build upon our past efforts, reinforce where our methods have been successful, and refine our approach where we are falling short.

In the summer of 2019, we launched the Department of Defense Catch a Serial Offender (CATCH) Program on our campus, which provides sexual assault survivors with an opportunity to anonymously disclose subject information in a database when making a restricted report. The purpose is to identify matches from multiple victims' observations that point to a serial offender who otherwise may not have been identified. At that point, the victim is privately notified and given a chance to convert from a restricted to an unrestricted report in order to initiate an investigation. In addition, since 2017, we have implemented a number of other programs and initiatives:

- **Cadet Healthy Personal Skills (CHiPs)** is a Life Skills and Healthy Relationships Program aligned with the Air Force Sexual Assault Prevention Strategy (AFSAPS). It is primarily focused on prevention for freshmen and foundational skills for Healthy Relationship Training (HRT).
- **Healthy Relationship Training (HRT)** is aimed at building a culture that prevents sexual assault through identifying relational warning signs (i.e., red flags, consent, and boundaries).

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- **Cadet Wing Intervention Training (CWIT)** focuses on empowerment, bystander awareness, and cadet responsibility. It is introduced in the sophomore year, with a further, leadership-focused training during the senior year.
- **Sexual Assault Resistance Education (SARE) Centre / Enhanced Access, Acknowledge, Act (EAAA):** Studies of this educational program done with females have shown a significant reduction in victimization from sexual assault. In the spring of 2019 we conducted a beta test of the program with 50 cadets, followed in the fall by half of the female cadets of the Class of 2023. Due to the COVID-19 pandemic, continuation of the pilot program in the spring of 2020 was paused out of health and safety concerns. Currently, planning is under way to complete the training program for the second half of the female cadets of the Class of 2023 and the female cadets in the Class of 2024.
- USAFA's **Safe-to-Report** policy grants amnesty to victims for certain minor, collateral misconduct, in order to encourage reporting. This policy served as the model for recent legislation in the FY 2021 NDAA, which directed the services to adopt similar policies.
- **Prepare Peer Leaders – Teal Rope:** This 6-hour training program focuses on developing skills in advocacy and resources for victims of sexual assault. As Teal Ropes (peer leaders), cadets act as liaisons in assisting cadet victims of sexual assault in accessing SAPR resources. The program began at our Air Force Academy Preparatory School in January 2019, and in the Cadet Wing in March 2019. Currently, there are 102 trained Teal Ropes in the Cadet Wing and 12 trained Teal Ropes at the Preparatory School. This effort of connecting Teal Rope cadets with

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victims of sexual assault has proven highly effective in the COVID-19 environment as an additional resource for victims to access our programs and resources.

- Through our **“Tell the Supt” Anonymous Comment Tool**, developed February 2019 in response to a past SH&V Report. We invited all cadets to provide suggestions, ideas, and feedback via an online anonymous tool – directly to the Superintendent. This tool generated 161 responses within the first month, ranging from personal stories to suggestions, to cadets discussing conversations with one another. All of this is valuable information that sheds light on the cadet experience with sexual assault at the Academy we otherwise would not have been able to obtain.

From April 7-9, 2021, we will be the virtual host of the 2021 National Discussion on Sexual Assault and Sexual Harassment at America’s Colleges, Universities, and Service Academies. This event was developed from a Department of Defense Service Secretaries directive to service academies, universities, and colleges, requesting collaboration to discover and promote evidence-based initiatives to improve the culture of sexual assault and sexual harassment reporting. It provides a forum where experts and leaders across the military services, industry, and academia can partner to discover and promote evidence-based prevention practices and implementation strategies for sexual assault and sexual harassment. We have hosted or participated in a number of other prominent and productive discussions over the past several years, and firmly believe that we must continue this dialogue and give an empowered voice to survivors of sexual violence as we work together to find solutions to eliminate sexual assault and sexual harassment on our campuses.

Addressing this problem must begin even before our cadets arrive at our Academy. To that end, we have been focusing increased efforts on selecting applicants of the highest character,

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who will adopt, internalize, and demonstrate our Core Values when given the privilege to join our Cadet Wing. These efforts have included enhanced accessions training and a video on our Core Values that all applicants are required to view before moving forward with their application. As a commander and 35-year member of our Air Force, I simply will not accept a culture and climate on our campus, in our campus community, or in our Air and Space Forces, that tolerates any prevalence of sexual violence, sexual harassment, or degrading behavior of any kind.

Diversity, Equity, and Inclusion

As I stated in the discussion of the priorities I established as Superintendent, I believe that embracing and empowering our diversity is a strategic imperative for our Academy, the future of our military, and the successful implementation of our National Defense Strategy. As we employ the Chief of Staff of the Air Force's recent "Accelerate Change or Lose" directive, we must also consider that the change we need to improve the culture and climate across our installation, and to win the conflicts of the future, spans from social to technological. We need to continue to break down barriers and utilize our full strengths as much as we need to foster cultures of innovation, creativity, and discovery. This will require us to take a hard look at ourselves to ensure we remain on the right flightpath.

To that end, this past summer we conducted an Internal Racial Disparity Review in order to provide an assessment of biases within our policies, processes, practices, curriculum, and artifacts, and to identify racial disparities unique to our Academy. This review demonstrated that our endeavors are strong, but we still have work to do so that racism and injustice do not negatively affect our operations, culture, and climate, and do not impede our mission success. As

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we draw upon the findings of this review to inform plans for future action and tangible, enduring change, we have already begun to implement some of the recommendations it provided. As a result of the review, the Academy established an accountability framework, including a Diversity and Inclusion Executive Committee, made up of USAFA senior leadership that has met monthly since December. In addition, we established a Diversity and Inclusion Action Group, made up of action officers across all Academy Mission Elements, that has met four times in the past three months, tracking review recommendations to closure. In addition, we recently hired a new Chief Diversity, Equity, and Inclusion Officer. Other actions have included:

- Additional funding was provided to cadet affinity groups, with plans to partner with alumni affinity groups for long-term initiatives.
- Based on the Racial Disparity Review, our faculty added a lesson this term to the Leadership 100 course to discuss the Department of the Air Force Racial Disparity Report.
- We developed a framework to address bias incident reporting.
- Listening sessions were held that aligned with special observance activities to obtain feedback from various demographic populations.
- Our Cadet Wing is planning to establish a Diversity and Inclusion Cadet Leadership position in all 40 squadrons (similar to SAPR “Teal Ropes” position).
- Last month, we created a Diversity and Inclusion reading room at the Cadet Library.

As I have been honored to return to the United States Air Force Academy campus for the third time in my career, I am often asked what has changed over the nearly four decades that have passed since I first arrived as a basic cadet from Richmond, Virginia. One thing that has not changed is our purpose: we are here to develop leaders of character. But as I look at our campus,

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our cadets, and our community, I see an Academy that has grown, and that continues to evolve alongside a rapidly changing nation and world. Our society is becoming more diverse, and with it, so are our Air and Space Forces and our service academies. Aided by recent efforts in admissions outreach and communications, our demographic trends are headed in a positive direction so that the composition of our Cadet Wing will more accurately reflect the composition of the United States. The Class of 2020 was the most diverse graduating class in Academy history, where 29% of the graduates were women, and 31% of the graduates identified as race/ethnic minority members. The Class of 2024 is the most diverse class ever at the Academy, with women comprising more than 30% of the class, and race/ethnic minority members comprising more than 36% of the class. While we are at all-time highs in these numbers, there are certain demographic groups where we have not achieved the numbers we strive for, and we will continue to focus our efforts on improving the diversity of our incoming classes.

In recent months, concerns about a new virus in the ranks of our military has come to light – extremism. Fortunately, our Academy stands ready to combat this virus because of our focus on fundamental concepts such as character, dignity, and respect for all human beings. As long as we instill these values across our leadership culture, these fundamentals can act as a vaccine that helps to inoculate us against intolerance, hate, and extremism. As long as the vast majority of our cadets, faculty, and staff recognize the value of diversity and embody dignity and respect toward all, it leaves no room for that virus to grow or spread throughout our ranks. In some ways, this approach is similar to the lessons we have learned in confronting sexual assault – focusing on the fundamentals of healthy relationships and respect for our teammates and community that everyone at our institution can learn from and appreciate. Just as sexual

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harassment and sexual assault have no place within a healthy and respectful relationship, hate and extremism have no place in a climate of dignity and respect, where diversity is valued.

Infrastructure

The United States Air Force Academy campus is unique among those across our nation in that much of our infrastructure – including the dormitories, classrooms, gymnasiums, training centers, and administrative buildings – was constructed at the same time, from the late 1950s to the early 1960s. As a result, many of our facilities begin to deteriorate and age out at the same time. Our campus is scenic and offers a number of advantages, but its location on the Front Range of the Rocky Mountains also means that our facilities are exposed to extreme temperature swings and high winds that exacerbate the degradation of roofs, pavements, utilities systems, and other systems. Recognizing its unique place in American history and culture, in 2004 our Cadet Area was designated a National Historic Landmark. While this designation honors the significance of our campus and mission, it also comes with special construction limitations that can complicate enhancement projects and increase the cost of some repairs.

We continue to prioritize investment in our facilities and infrastructure in order to posture the Air Force Academy to meet its mission requirements, care for our Airmen, Guardians, and their families, and ensure that we are prepared for the future. Since 2006, we have received more than \$900M for the restoration and recapitalization of facilities and infrastructure, most of which came in the form of operations and maintenance funds provided within the Facilities Sustainment, Restoration and Modernization (FSRM) program. In addition, we have also received substantial Military Construction (MILCON) funding for projects across our campus. These projects have included:

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- A 9-phase restoration of Vandenberg Hall, our largest dormitory at 2,500 bed spaces.
- Restoration of Mitchell Hall, our cadet dining facility.
- A 7-phase restoration of our Cadet Gym.
- Replacement of high temperature hot water lines to the Cadet Area and other areas on base which provide heating and cooling from a central plant to cadet dorms, our academic building, and other facilities.
- In FY 2019, we were awarded a \$158M project to repair the exterior envelope of our iconic Cadet Chapel, with an expected completion in 2024.

Coupled with traditional funding programs, we are fortunate to have partnerships with non-profit organizations like the Air Force Academy Foundation, the Association of Graduates, the Air Force Academy Athletic Corporation, and other smaller foundations. This support provides financial resources, goods and services, and real property gifts. We use these gifts to provide a margin of excellence in the enhancements of facilities and infrastructure of the kind that are not typically provided by funds appropriated for FSRM and MILCON programs. A prominent example of this partnership is Polaris Hall, completed in 2016, which now houses our Center for Character and Leadership Development. This project consisted of \$27.5M in MILCON and \$17M in enhancements funded by donations. Other recent projects funded by donations have included:

- A new scoreboard for Falcon Stadium and renovation and expansion of the home team lockers in the stadium.
- An Air Warrior Combat Memorial to highlight Academy graduates and other Air Force aviators who have distinguished themselves in aerial combat.

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- Restoration of the Air Gardens, a key feature within our Cadet Area. In addition to the restoration, the project provides two outdoor classrooms complete with electrical power outlets and wireless network connectivity.
- A Southeast Asia Memorial display in our academic facility, Fairchild Hall, to complement history courses and inspire cadets.

Conclusion

Last year, our faculty, staff, and leadership team embarked on an ambitious effort to develop a strategic plan across the mission elements of our Academy. The resulting plan, paired with the aforementioned leadership priorities I have implemented, represent a collective dedication to excellence and renewed mission focus throughout our campus. The events of the past year have been a case study in the need for flexibility and adaptability, so in crafting our plans and priorities we cannot be afraid of change.

As leaders we must also recognize the necessity of making decisions that may reshape our institution. I am excited about one such effort on our campus that embodies and empowers this mindset and will help prepare our cadets to solve the untold problems they will face in their careers – 10, 20, and 30 years in the future. Our new Institute for Future Conflict (IFC) was established to act as an integrator of scholarship and thought leadership, providing resources that will enable cadets, faculty, and senior leaders to examine the technological and socio-cultural demands of modern conflict. The IFC will focus its efforts along three lines: learning to leverage emerging and disruptive technologies, understanding potential adversaries and allies, and educating on the foundations of warfare and conflict. Through initiatives to strengthen faculty and cadet research, enhance faculty development, provide opportunities for cultural immersion

United States Military Academy Overview

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travel, and much more, I am confident that this new Institute will help us accelerate the change needed to remain ahead of and outpace our adversaries.

Developing leaders of character prepared for the demands of modern conflict is not without life lessons and learning from mistakes, failures, and hardships. Across a number of the areas I have mentioned, we have work to do in order to maintain the high standards our society rightfully expects of its service academies. However, on our campus I also see a population of cadets who are much more informed, technologically savvy, innovative, and physically fit than any who have come before them. I see an opportunity for us as senior leaders and educators to shape this next generation of officers into one of limitless potential. Even in the midst of a historic hurdle like COVID-19, the performance of our cadets, faculty, and staff coupled with the support of our extended communities, have instilled in me a great level of confidence about our future. While we are not ready to declare victory anytime soon in a mission that requires constant improvement, innovation, and refinement, I believe our path is one of continued success in developing the future leaders of our Air and Space Forces. Once again, thank you for the opportunity to speak before this committee, and I look forward to your questions.

Ms. MCCOLLUM. Thank you very much, gentlemen.

For the first question, as I said, I had the opportunity of speaking to the three of you over the past several days, so I am going to reserve my question for the end, and I am going to turn to Mr. Ruppersberger first for questions.

CLIMATE CHANGE

Mr. RUPPERSBERGER. I want to thank all three for the job that you do in preparing, you know, our future leaders of the military. Excellent job.

I want to thank you, Chairwoman McCollum, Ranking Member Calvert, for your leadership.

And my first question is going to be about climate change. You mentioned that in your remarks, Admiral Buck. And I am going to speak to the broader context of an infrastructure budget.

Now, I am president of the Naval Academy Board of Visitors, and we speak often about many of the challenges that we have there, but I am particularly concerned with the issue of sea-level rise. And I know that both Air Force and West Point don't have that issue and have plenty of land there, while the Naval Academy is surrounded by water, and it is getting worse and worse.

Now, Admiral Buck, can you explain to us the magnitude of this issue for the record and what steps that you are taking to address these concerns, what your needs are?

And you might want to discuss also the new building, one of the first new buildings that was built in the Naval Academy in many years, the cybersecurity building, and how that was designed to protect the interior of the building and the equipment in the building, but how that can repel or save the building from the sea-level rise that occurs on a regular basis.

Admiral Buck.

Admiral BUCK. Congressman Ruppersberger, thank you very much for the questions. Great to see you at least two-dimensionally and hopefully three-dimensionally sooner than later.

With regards to the series of questions you asked, all related to climate change, you have identified our greatest vulnerability; it is our geographic location. We are built on a lot of reclaimed land. We are at the confluence of one of Maryland's major rivers and the Chesapeake Bay, large bodies of water. And we are also affected throughout the entire day, 365 days of the year, by the prevailing winds that have existed for centuries, easterly and southeasterly winds, which, when you combine that weather with sea-level rise, with subsidence that is pretty significant in the Chesapeake Bay area here on the East Coast and in the mid-Atlantic, we are continually experiencing the negative effects of high-tide flooding, almost on a regular basis.

To touch on the one question you asked about the magnitude of it, for an example, to kind of give a compelling statistic, in the entire decade of the 1990s, the Naval Academy was negatively affected by high-tide flooding 41 times in a decade. Now we are experiencing 41 instances of high-tide flooding per year.

And as we look at all of the projections from all of the science and those that are looking at this, especially on the East Coast and looking at it for Naval infrastructure, it is projected by 2050 that

we will see this high-tide flooding negative effect every single day of the year.

What does that mean? It floods out some of our roads, some of the key networks that we bring our workforce on the campus day-in and day-out. It affects some of our parking lots where they try to park. And it affects the entrances and exits to some of our buildings.

So it is a reality, and I am very proud to tell you that my predecessor formed the U.S. Naval Academy Sea-Level Rise Advisory Council in 2015, and I have the pleasure, the honor, and the imperative to carry on the work of that advisory council. It is made up of scientists from the Naval Academy, engineers, different stakeholders in my Naval Academy team, as well as stakeholders from the city of Annapolis and the State of Maryland.

It is informed by the Army Corps of Engineers and other experts that we bring in to get after a study that they have embarked on now that we intend to see, or expect to see, at the end of this calendar year that will help us create a military installation resiliency plan.

They are going to present to us different courses of action, engineering solutions, that we can take around the Yard. They might be building up cement seawalls higher and better. It might be creating earthen berms or levies and raising the level of roads to block different areas. And it may be in combination with correcting some of our stormwater drainage systems that maybe has not had a good look at a modernization in a number of years.

We understand that, as we combine all of those recommended engineering solutions and understand and appreciate their associated costs that we can present to you, to Members of Congress, and to my Navy for help, that if we do that very deliberately over the next 30 years, very consistently, deliberately, and with conviction, we can ensure that we not only protect the infrastructure at the Naval Academy but also with our host city, the historic city of Annapolis.

Ms. MCCOLLUM. Thank you.

Mr. RUPPERSBERGER. Okay. I have to yield back. My time is up. Thank you for those answers.

Ms. MCCOLLUM. It is a great question, and we will be following up on it. And I think we need a different—in my opinion, a different timeframe that is a little quicker than 30 years, because that is the best-case scenario, I think, that we heard from that.

Mr. Calvert.

Mr. RUPPERSBERGER. I wanted to say that.

PREPARATION OF FUTURE LEADERS

Mr. CALVERT. Thank you.

And I thank the superintendents for their testimony.

It has been pointed out that we are currently in the age of rapidly evolving technology, unseen in human history, impacting warfare domains in almost every single way imaginable. Of course, Dutch has an installation that is in his district that is involved in that every single day. I mean, cyber is a huge issue that we have to face every single day—and, now, space domains.

Can each of you give us examples of how your respective institutions are preparing our future leaders to adapt to this type of envi-

ronment? Are you making curriculum changes that focus more heavily on that technology?

I guess that is for all three or one of you, representing each other.

General WILLIAMS. Yes, sir. Thank you for that question. I will start off. General Williams here at West Point.

Sir, we, as we talked yesterday—thank you for that question—we absolutely are, here at West Point, thinking about the future in very critical ways.

I would start with—and thanks to Congress—our Cyber Engineering and Academic Center, which will transform how we think about the future in very real ways. And it will also allow us to continue to attract the best and brightest from our country.

We just broke ground about 2 months ago, and thanks to Congress, we have the ability to do that. So we look forward to having the space to develop and provide a forum where, not only will our cadets be able to interact with the best and brightest around the world and invite folks to continue that discussion, but also their daily conversation will be influenced and shaped by this great facility.

And, sir, in terms of how we do our curriculum, in terms of the Academy, we have new majors. We have a space science major and a space science minor, just recently, that is under the direction of our physics and nuclear engineering department. They have made a lot of great inroads with that. I have been there for some time. Currently, we have 70 cadets enrolled in the major, 20 cadets enrolled in the minor.

We also have a geospatial information science major, where we have 85 cadets currently enrolled.

So we are producing the young men and women who will be leaders in this space, if you will, in the future, and we feel very comfortable about that.

We also enjoy the Army's Cyber Institute, which is co-located here. It is the Army's think tank to what we think about. And that really is a nexus where we bring the best and brightest. And they routinely provide to the literature about what we should be thinking about to compete and defeat our adversaries in the future and in the cyber domain.

So those are some of the things internal to West Point, the brick-and-mortar projects which you all have helped fund, and then, more importantly, the adjunct Army Cyber Institute just outside the gate. And cadets are allowed to interface with the Army Cyber Institute, so folks come in and out of that in their classroom. And the instructors actually rotate on my staff as well.

Thank you for your question, sir.

Mr. CALVERT. Thank you.

Navy, Air Force, any addition to that?

General CLARK. Yes, sir. Thank you for the opportunity.

And what I will start with is our National Defense Strategy that tells us as a country that we have to be prepared to compete in an environment of great-power competition. And our chief of staff, General Brown, has charged us in his order to "accelerate change or lose" to develop airmen that are prepared to compete in that environment.

So, at the Academy, much like West Point and Annapolis, we are developing leaders that are looking to the future. And that is one of my top priorities. We have 50 percent of our majors are STEM majors; 50 percent of our core courses are STEM courses.

But, beyond that, we are also developing leaders to think boldly, to be innovative and solve problems that we don't even know about. And we have recently stood up an Institute for Future Conflict to help us to meet the needs and to prepare our cadets so that they are not ready to meet challenges for 5 years from now but challenges 25 years from now.

And we are very excited about the direction that we are taking and that we are moving. In fact, we have just hired a new director of that institute.

So I think we are in a great place to have our leaders ready to lead us into the future and compete well on the future stage of our global environment.

Thank you, sir.

Mr. CALVERT. Well, thank you.

It looks like my time is just about up, Madam Chair, so I will yield back the balance of my time.

Ms. MCCOLLUM. Well, that is good. Maybe we will have an opportunity to catch up on the last service we didn't hear from.

Ms. Kaptur.

DIVERSITY AND CULTURE AT THE ACADEMIES

Ms. KAPTUR. Thank you very much, Madam Chair. And thank you for hosting us this morning with these really outstanding leaders for our country, all the superintendents.

My two questions involve diversity and culture at the academies.

The first is, could each of our guests please summarize their progress in terms of diversity, which has been one of the most challenging aspects of my work as a Congresswoman relative to the academies? Despite the diverse district I represent, getting young people to apply who would be more representative of the district that I represent—and believe me, it isn't for lack of trying. It has been very, very hard. So just talk to us about, in each of the academies, your progress in terms of recruitment for admission.

And then, secondly, in terms of culture, I was very interested in Superintendent Williams' use of the word "character," developing character. I am interested in your views at the Academy of the types of students that are being admitted and some of your challenges there.

I am familiar with some of the drug problems that have occurred at West Point, but it is not the only place where those have happened.

And I am interested in your talking about the cheating that has occurred on many of the tests in each of the academies, and how, in fact, you can educate to character. Do your admissions not possess those traits? Do you have to teach to that? Has this changed in the last 40 years?

I am very interested in your comments on diversity and on developing cadets with character.

General WILLIAMS. Yes, ma'am. Thank you for the opportunity to talk about that.

Diversity, as I mentioned in my opening comments, is a line of effort, it is a priority. I think it is very important for young men and women that come here that we look like the United States Army, we represent the country.

I actively am in this space. We have a very active outreach program. I would love to reach out and help you in that effort, ma'am, as we go forward. I actively—in this virtual space, it is a little difficult, but we hold a number of online webinars. I usually participate in them on Saturday, and I actually talk and recruit people of different diversity.

Ma'am, we meet or exceed all of the officer percentages here at West Point. So for African Americans, for Asians and Hispanics, we are at or over the percentage that are actively represented in the Active Duty Army officer corps right now at West Point—24 percent women, 17 percent African American. And I can share with you more of those details later.

So diversity is something that I think is critical to winning. And, especially as we look at complex problems in the future, you have to have folks that are of diverse backgrounds and ethnicities, I think.

In terms of culture, I mentioned before how we have elevated culture. It is a very deliberate effort. We have a highly qualified individual who integrates across the enterprise, not only in the academic departments but in my physical department and in my military department, who answers to me about culture.

And we have nine highly qualified—the Army allowed us to have these folks to come in here, and they are a part of our program. And it is a very deliberate way to take young men and women who—right now, there is a set of high school seniors who will be here in about 4 months. And we take them where they are, and, over the 47-month experience, we develop them into leaders of character. So it is a very deliberate effort. I can talk to you about that in more detail.

And then, finally, ma'am, you asked about honor. Last spring, our young men and women were in a remote learning environment and were challenged—some were challenged in terms of home life at home and a variety of issues, which I can go into in more detail later if you would like. They were away from their coaches, their teachers, their TACs, their TAC NCOs, and the structures that provide the way ahead.

And, from my perspective, these young men and women had only been here a semester, and there is no excuse for violating United States Military Academy Honor Code, and I have all the tools I need to hold them accountable for that, and we will. And the ones that remain here, we will develop them into leaders of character, and they will learn from this experience.

Thank you, ma'am.

Ms. KAPTUR. General, what about drug use at West Point?

General WILLIAMS. Ma'am, I haven't seen—that we have some small instance—it is not raging right now, to use that word. There are the normal kinds of challenges that any commander faces. This is not something that is a very high, currently, raging at West Point in terms of—

Ms. KAPTUR. Have you expelled anyone because of drug use?

General WILLIAMS. I have. Not this year, but in my past 3 years, yes, ma'am, I have.

Ms. KAPTUR. Thank you.

General WILLIAMS. Yes, ma'am.

Ms. MCCOLLUM. Thank you.

Mr. Rogers.

PANDEMICS ON THE ACADEMIES

Mr. ROGERS. Thank you, Madam Chair.

I thank the gentlemen for their appearance before our subcommittee and for the great job you are doing in your respective academies.

Let me ask you about something that is unpleasant, one aspect, a big aspect, of the COVID-19 problem, and that is the mental well-being of our world in these times, but, especially, of course, at the academies, with your personnel, the mental health.

In the spring of 2020, COVID-19 forced the academies to change how they operated—locking down campus, quarantining cadets and midshipmen, moving classes online, and ultimately sending the student body home early for the school year.

While the cadets and midshipmen at West Point and the Naval Academy were sent home in March, the Air Force Academy kept senior cadets on campus. And, in March, two Air Force Academy seniors were found dead in suspected suicides while under strict lockdown because of COVID-19.

That led, of course, to conversations about the impact of the pandemic on mental health. Both West Point and the Naval Academy reported seeing indicators of mental health decline in the cadets and midshipmen throughout the coronavirus pandemic.

How are the academies dealing with this obvious problem, following COVID-19 safety protocols, as well as keeping your campuses safe and the well-being of cadets and midshipmen in good shape?

Admiral BUCK. Congressman Rogers, Admiral Buck here from Annapolis. I will take the lead on answering that from our perspective here at the Academy.

Looking back chronologically, when we did shift very rapidly to an online environment back in the spring, the spring semester of 2020, I am very proud to tell you that our team here, our collective team of people that can help midshipmen develop their resiliency and respond to them in their times of need, quickly converted every single service that we have to an online environment. And I don't believe we missed a beat with regards to making ourselves available to each and every midshipman.

And it is a large cohort of folks. It is their shipmates, their fellow midshipmen. It is their company leadership or the commissioned officers and the enlisted leaders in the brigade that usually see them on damn near an hour-by-hour basis each day. It is our Chaplain Corps. It is our Midshipmen Development Center, which is staffed by psychiatrists, psychologists, nutritionists, social workers, and sexual assault folks that can help. All of those people were able to immediately make themselves available to the midshipmen during that distanced environment in the spring and the summer.

What we saw was a rise in a request for services, not a rise at all for specific appointments for therapists. And that should be noted. It was a significant difference in their request to try to learn to cope for themselves, to cope amongst their family environment or wherever they were operating from to take school online.

But, as I said in my opening statement, it is an imperative to bring these young men and women back and develop them and care for them in person. And we began that right near the end of June with Plebe Summer, with some summer school, with a bit of our summer training, and then the fall semester. And that allowed all of those stakeholders to once again reach out and help midshipmen in person. It is a very robust network.

And I also have differentiated to myself and to my senior leadership team, it is one thing to talk about mental health, it is another thing to talk about morale, and there is a very big difference there.

We take their mental health of our midshipmen and even our faculty and our staff, our whole Naval Academy family, we take that very seriously and try to look out for one another and address it when we can.

It is incumbent upon my commandant of midshipmen and myself and other senior leaders to also work to improve morale when we have to impose certain things like the lockdown to the campus when we have spikes of COVID to try to mitigate it and knock it down.

And we have seen success in addressing both a morale issue as well as a mental health issue, sir.

Mr. ROGERS. There is a huge stigma—with human beings in general, but speaking now of military personnel—a huge stigma about asking for mental health help. How are you able to overcome that problem?

Admiral BUCK. Sir, in my past, as a flag officer in the Navy, I was given an assignment to lead the 21st Century Sailor Office, which looked at all of destructive behaviors of Navy sailors. And one of those was, I was the suicide prevention officer for the United States Navy.

And I am proud to tell you that what we realized was we needed to work diligently to reduce that stigma and to, instead, advertise to Navy sailors, to all of us, that it is okay to ask for help. In fact, the way we branded that was, it is a sign of strength to ask for help. And what we are seeing is, over 50 percent of the battle is just to be able to have an ability to talk to somebody, to get some of your problems and your demons off your chest by talking to someone.

So learning to be a good active listener, making yourself available, and ensuring that everyone realizes that, the minute you ask for help with a mental health issue, you are not going to be thrown out of the Naval Academy or you are not going to be tossed out of the Navy. We have made such a big investment in you, we see such great potential in you, that we would like to help you through your demons and help you through what is stressing you, and then get you back up on that horse that threw you off and make you a productive midshipman and then, hence, a productive Naval officer out in the fleet.

Ms. MCCOLLUM. Thank you so much for that thoughtful question, Mr. Rogers. And mental health is something in our military we know we want to cut down on people feeling that they can't ask. So thank you. And I am sure the committee members appreciated the fact that we took an extra minute to get that answer. Thank you very much.

Mr. Cuellar.

EFFORTS TAKENS FOR DIVERSITY IN THE ACADEMIES

Mr. CUELLAR. Thank you so much, Madam Chair.

I wanted to go back on the question of diversity that I believe Representative Marcy Kaptur brought up. Can you tell us a little bit about prep schools and how you all use prep schools to get diversity into your academies?

I know there are some prep schools in different parts of the country, but there are areas that there are really no prep schools at all, and they have to travel a long way to get some of those students, to get the diversity.

Could you all tell us what you all do and how you all set up some of those prep schools, or is it all private-sector-involved, or are there partnerships for the academies?

General CLARK. Sir, this is Lieutenant General Clark from the Air Force Academy, and I can address that.

Our prep school is significant in helping us to shape the diversity and the makeup of our cadet population as they come in. And they are on campus; it is about 200 prep school cadet candidates that are there. But we also have opportunities at other prep schools, as you mentioned, throughout the country where we can garner cadet candidates from to bring into the Academy.

And we have an organization called our Falcon Foundation, which is comprised of a lot of graduates and volunteers who help us to shepherd people into those other prep schools so that we can have the opportunity to reach from all districts of our country to bring them into the Academy, help them to achieve.

If there are any shortfalls in their admissions or any issues that they need to deal with to make them more competitive for the Air Force Academy, we bring them into those schools, and they really do help us to shape not only from an ethnic and racial but gender perspective.

And our Falcon Foundation is that organization that I talked about that helps us to do that. They really meet any needs that we have. So if we see shortfalls in the makeup of our cadet population, they are very responsive to us and help us to shape it to make our class everything we want it to be.

And, frankly, it is working. Our current class of 2024, our freshmen, is the most diverse class we have ever had at the Air Force Academy. We continue to lean on external partners to help us to shape our class.

Over.

General WILLIAMS. Sir, I will take a shot at it as well. Much like Rich, we depend on the prep school, USMAPS. It is up the hill. My son went to the prep school before he came here. It is a vital part of how we build diversity here at the United States Military Academy.

The purpose—like Rich, we have about 225 places up there every year. As you know, sir, you apply to West Point, and if you are lacking in some of the skills that you need to succeed down the hill, as we call it here, that is a perfect year for you to do better.

And we do use it, as well, to get at diversity, not only as Rich mentioned but also from soldiers from the regular Army. We have about 40 of that 225 soldiers from the regular Army. And a lot of the things that were talked about earlier, they bring a maturity to some of the things that were talked about earlier—sexual assault, sexual harassment—because they have real-life experience. And they are mentors down in the corps in that next year.

I would add another, sort of, layer to that.

I don't know if my Navy shipmate has anything to add.

Admiral BUCK. Very similar to my sister academies, our magnitude, about 250 young men and women matriculate to the Academy through the Naval Academy Prep School. Ours is not colocated with Annapolis. It is up in Newport, Rhode Island. And we also affiliate with 17 private prep schools around the country. We call them foundation schools.

On any given year, sir, 300 midshipmen will have furthered their academic skills and allow us to garner greater diversity in the brigade by coming through either our prep school or our foundation program. And the purpose of that is exactly as my two colleagues have described to you.

Mr. CUELLAR. All right.

Let me, before my time is over—I have about 30 seconds. First of all, thank you. And I am really happy that we work well, just like the other members, with your academies. So I want to thank you for diversifying the academies.

Could I ask each of you all to provide—I don't know if anybody else wants copies of this, but I would like to be provided by all three of you all your work with prep schools, the different schools you have, and the foundation, the Falcon Foundation, and all that.

If you all can send that over to me, because there are areas—my time is over, but let me just say this: There are areas along the border, highly Hispanic areas—you know, Laredo, for example, is 96 percent Hispanic, and I am sure some other folks they have very high-minority areas. And I would love to see if we can partner up with you all on some of those prep schools on that.

So if you all can send that over, I really would appreciate it.

Thank you, Madam Chair.

[The information follows:]

United States Army West Point Diversity Programs

The mission of USMA Preparatory School (USMAPS) is to motivate, prepare, and evaluate selected candidates in an academic, military, moral, and physical environment to perform successfully at USMA. USMAPS educates, trains, and develops a new class of 245 Soldiers for approximately 10 months each year for the sole purpose of earning admission to and graduation from USMA. USMAPS is a strategic asset in achieving USMA's diverse class composition goals, i.e., prior service, recruited athletes, and under-represented minorities. The current class includes 154 (63%) minority candidates, an increase of 11% from the Class of 2020. Additionally, at USMA, former Cadet Candidates (CCs) are expected to serve as formal and informal leaders among their peers.

Candidates do not apply to USMAPS. All prospective candidates apply to USMA. If disqualified academically, physically, or medically for USMA, candidates may be considered for admission to USMAPS. West Point considers talent and diversity in its admissions decisions with strong consideration for soldiers, leaders, athletes, and geographic, ethnic, and socioeconomic diversity. Each year approximately 245 candidates are admitted to USMAPS. Each CC must re-apply for admission to USMA during the 10-month training and education period at USMAPS and must be fully qualified for admission before matriculating to West Point the following year.

Admitted CCs report to USMAPS in late June/early July each year for USMAPS Reception Day (R-Day) and Cadet Candidate Basic Training (CCBT). The three-week CCBT program focuses on developing basic military skills/discipline and begins the CCs' character development training, which is threaded across all aspects of the USMAPS program. During CCBT, USMA Cadets serve as the training cadre to prepare the new CCs to begin the academic year. After CCBT, CCs serve in the leadership positions within their battalion to develop their initial leadership skills.

Upon the completion of CCBT, the CCs enter a rigorous one-year academic program, broken into four quarters. CCs take classes in Math (pre-calculus/calculus), Science (chemistry, biology, and physics), English, and Study/Life Skills. Additionally, CCs take courses on the fundamentals of physical fitness and military science and every CC participates/competes on a sports team in line with the idea of "Every Cadet an Athlete." To broaden their experience, CCs also participate in a variety of clubs that promote cultural and leadership growth. The state-of-the-art USMAPS facility provides a single site with barracks, classrooms, library, study areas, dining facility, gymnasium, weight rooms, locker rooms, athletic fields, and physical therapy facility. Throughout all courses and programs, character development is interwoven. While at USMAPS, CCs learn and begin to internalize the USMA Honor Code and the Army Values. Upon successful completion of the program, CCs graduate from USMAPS, take leave, and report for the USMA R-Day.

To gain admission into USMA, USMAPS continuously evaluates the CCs on academics, physical performance, and military discipline and leadership. Each CC reapplies to USMA, which includes seeking congressional nominations. As part of the admissions process, the USMAPS program provides a comprehensive overview of each CC to the USMA Admissions Committee, on which the USMAPS Commandant is a standing member. To receive the Commandant's endorsement, a CC must earn a 2.0 GPA or above, pass the Candidate Fitness Assessment, meet Height/Weight/Body Fat standards, and be complete with any command directed mentorship programs. Additionally, CCs must meet DoD medical accessions standards. The USMAPS physical therapy team assists CCs throughout the academic year to set up necessary medical appointments to pursue any necessary waivers.

The United States Military Academy (USMA) has a single federally funded preparatory school located within the West Point Installation. The United States Military Academy Preparatory School (USMAPS) is the principal feeder prep school for West Point. Approximately 240 cadet candidates enroll each year to USMAPS and approximately 85% of those enrolled will matriculate to USMA the following year.

- Diversity representation in the USMAPS Class of 2020: **238 Enrolled**
 - o 112 African Americans
 - o 32 Latinos
 - o 2 Native Americans
 - o 4 Asian Americans
 - o 5 Native Hawaiian/Pacific Islander
 - o 45 Females
 - o 92 Caucasian Americans
 - o 92 Athletes
 - o 60 Soldiers
- Diversity representation in the USMAPS Class of 2021: **242 Enrolled**
 - o 116 African Americans
 - o 38 Latinos
 - o 2 Native Americans
 - o 6 Asian Americans
 - o 3 Native Hawaiian/Pacific Islander
 - o 40 Females
 - o 88 Caucasian Americans
 - o 99 Athletes
 - o 59 Soldiers

West Point also has relationships through other preparatory school programs across the United States. Known as the West Point Preparatory Scholarship Program (WPPSP), established in 1979 with the Association of Graduates (AOG) and Director of Admissions (DAD), the program provides partial scholarships for an additional year of post-secondary school education for carefully selected and highly motivated candidates seeking admission to USMA.

The WPPSP is a scholarship sponsored by the AOG awarded on a competitive basis for only one year of tuition. Based on NCAA requirements, for every athlete enrolled in the WPPSP, there must be three corresponding non-athletes. The WPPSP preparatory program must follow National Collegiate Athletic Association (NCAA) guidance which require that the program be conducted by an “outside organization, representing the interests of the Academy. . .” Candidate selection is determined by the Director of Admissions, USMA, and confirmed by the AOG. The selected candidates may apply for enrollment in any one of the colleges (non Athletes) or preparatory schools (athletes) from among the AOG approved colleges and schools. Offers of Admission are made the following year upon successful completion of the program and qualification by the Admissions Committee.

Preparatory Schools and Colleges Associated with the WPPSP in 2021 include the following 15 schools listed below. Please note that we used to have a Prep Program associated with Greystone Academy at Schreiner University in Kerrville, Texas, but Greystone recently reflagged to Lake of the Ozarks in Missouri and we have not continued our affiliation with its program.

The majority of the WPPSP participants attend the five schools listed below in Alabama, California, Georgia, Virginia and New Mexico; however, a handful will attend one of the others listed.

Approximately 40 students each year are enrolled in the WPPSP with a ratio of at least three non-athletes for every athlete in the program. Historically 99% of WPPSP recipients matriculate into West Point the following year after successfully completing the academic program at the preparatory school.

- Diversity representation in the WPPSP Class of 2020: 41 Enrolled
 - o 0 African Americans

- o 1 Latino
- o 1 Native American
- o 2 Asian Americans
- o 0 Native Hawaiian/Pacific Islanders
- o 12 Females
- o 37 Caucasian Americans
- o 6 Athletes
- o 35 Non-Athletes
- Diversity representation in the WPPSP Class of 2021: 40 Enrolled
 - o 1 African American
 - o 1 Latino
 - o 0 Native Americans
 - o 3 Asian Americans
 - o 0 Native Hawaiian/Pacific Islanders
 - o 9 Females
 - o 35 Caucasian Americans
 - o 9 Athletes
 - o 31 Non-Athletes

West Point Preparatory Scholarship Program Schools:

Alabama New Mexico New Jersey
 Marion Military Institute New Mexico Military Institute Blair Academy
 California Connecticut Maine
 Northwest Prep Avon Old Farms School Hebron Academy
 Canterbury School
 Georgia Choate Rosemary Hall Massachusetts
 Georgia Military Academy Loomis Chaffee School Berkshire School
 Cushing Academy
 Virginia New Hampshire
 Hargrave Military Academy New Hampton School Pennsylvania
 The Hill School

United States Naval Academy

Preparatory Schools Diversity

The Naval Academy uses two different preparatory pipelines for selected students. The Naval Academy Preparatory School (NAPS) is federally funded and the Commanding Officer reports directly to the Superintendent of the Naval Academy. NAPS was originally established as a preparatory program for enlisted sailors and marines, but was expanded to include other candidates selected by USNA's Admissions Board. Students who attend NAPS who are not enlisted are required to enlist in the Navy for the sole purpose of attending NAPS, and the education and training they receive is funded by the federal government.

USNA also provides an opportunity for approximately 50 students each year to attend a civilian school. In this program a student may attend a civilian school under the sponsorship of the Naval Academy Foundation, which has developed partnerships with approximately 16 schools nationwide, including some schools with a fifth-year preparatory program (ex: The Peddie School) or a military junior college (ex: New Mexico Military Institute (NMMI)). Students in the Foundation program do receive need-based funding based on an evaluation of their financial circumstances, and are tracked throughout the course of the preparatory year by the Executive Director of the Naval Academy Foundation much like the Commanding Officer of NAPS. Students do not enlist for this program, but are required to follow the same academic and physical fitness preparation as NAPS.

Selection of students to attend preparatory programs under the guidance of USNA is conducted with the recommendation of the Admissions Board, which uses a variety of factors in making its recommendations. In addition to assessing academic and physical fitness preparation, the Admissions Board does provide consideration to racial/cultural/ethnic background, but also other factors such as first in family to attend college, first generation American, English as a second language, leadership/leadership potential, exceptional adversity or disadvantage, exceptional performance in the active forces (for enlisted applicants), unusual life experiences, fluency in another language, interest in STEM disciplines, and athletic prowess. Yearly, about 60% of the students who are admitted to NAPS are those with diverse cultural backgrounds and about 40% of the students who attend a civilian preparatory program are those with diverse backgrounds.

Academy Work with Preparatory Schools

While at NAPS, students attend classes in English, Chemistry, Physics and Math which are designed to prepare them for eventual admission to USNA. Students receive placement evaluations when they are inducted at NAPS in July each year and attend classes in Math, Chemistry or Physics based on initial assessments of their academic progress. In addition to class room instruction, students may seek additional instruction through supplemental instructors after class hours who have been hired to support the courses offered at NAPS. Students who attend NAPS also receive basic military instruction, such as drill, Navy heritage/core values, honor/character development, as well as physical fitness training. NAPS also provides instruction to approximately 25 students who will eventually matriculate to the United States Coast Guard Academy (USCGA). USCGA candidates receive the same education as USNA bound students, and similar military/core value training.

An Admissions Board is convened at the completion of NAPS, which includes senior officials from the Naval Academy and the Commanding Officer of NAPS, and appointments to USNA are offered to students approved by the board. Annually, approximately 240-250 students are admitted to NAPS each year who will eventually matriculate to USNA. Like NAPS, an Admissions Board is held at the end of the year prior to Admission to USNA for those in the civilian preparatory program.

United States Air Force Diversity Programs

USAFA has several programs and partnerships that reach out to diverse populations which include:

- Hosts 2-3 Falcon Visitation experiences annually, which are recruiting trips to USAFA specifically targeted at 60 diverse candidates who are high school juniors.
- The Summer Seminar recruiting event, USAFA's largest event, hosts approximately 700 attendees of which this year 65% of seminar selectees came from diverse backgrounds.
- This year, USAFA is hosting its first diversity panel for students who have received an appointment in order to encourage them to accept that appointment and educate them about the support and inclusion they will have at the institution.
- Each year, 27 recent graduates are stationed around the country in order to recruit diverse candidates apply to USAFA. USAFA intentionally places diverse graduates (many with language ability) in those positions to help potential applicants see themselves at USAFA.
- USAFA partners with National organizations such as Tuskegee Airman Inc., 100 Black Men of America Inc., and the Organization of Black Aerospace Professionals to help further minority candidate outreach.
- USAFA continuously conducts outreach to largely Hispanic areas to include the TX-28, TX-15, and TX-34 districts. USAFA has particularly experienced a lot of success in the TX-28 district.
- Two Admissions Liaison Officers (volunteer Academy recruiters) are stationed in Del Rio, TX and focus on outreach in South Texas.
 - A diversity and STEM-focused booth was planned for the 2020 Del Rio Airshow, unfortunately, the airshow was cancelled due to COVID

This school year (August 2020 to present), USAFA Admissions has participated in 58 events focused specifically on diversity recruiting. The following events were specifically focused on South Texas and Hispanic Diversity recruiting:

- 9/15/20 - Congressional Hispanic Caucus Institute Leadership Conference
- 10/9/2020 - TX-28 Academy Day
- 10/27/20 - Marine Military Academy HS Visit, TX-34
- 10/28/20 - Los Fresnos HS visit, TX-34
- 10/29/20 - Brownsville ECHS Visit, TX-34
- 11/10/2020 - Cuero HS Visit, TX-34
- 2/16/2021 - National Hispanic College Fairs, Inc. South Texas College Fair
- 2/17/2021 - National Hispanic College Fairs, Inc. North Texas/OK/AR College Fair
- 2/18/2021 - National Hispanic College Fairs, Inc. MN/IA/ND/WI College Fair
- 2/23/2021 - National Hispanic College Fairs, Inc. AZ/NM College Fair
- 2/24/2021 - National Hispanic College Fairs, Inc. CO/NV/UT/LA College Fair
- 2/25/2021 - National Hispanic College Fairs, Inc. South Midwest College Fair

This school year (August 2020 to present), USAFA Admissions has participated in 58 events focused specifically on diversity recruiting. The following events were specifically focused on South Texas and Hispanic Diversity recruiting:

- 9/15/20 - Congressional Hispanic Caucus Institute Leadership Conference
- 10/9/2020 - TX-28 Academy Day
- 10/27/20 - Marine Military Academy HS Visit, TX-34
- 10/28/20 - Los Fresnos HS visit, TX-34
- 10/29/20 - Brownsville ECHS Visit, TX-34
- 11/10/2020 - Cuero HS Visit, TX-34
- 2/16/2021 - National Hispanic College Fairs, Inc. South Texas College Fair
- 2/17/2021 - National Hispanic College Fairs, Inc. North Texas/OK/AR College Fair

- 2/18/2021 - National Hispanic College Fairs, Inc. MN/IA/ND/WI College Fair
- 2/23/2021 - National Hispanic College Fairs, Inc. AZ/NM College Fair
- 2/24/2021 - National Hispanic College Fairs, Inc. CO/NV/UT/LA College Fair
- 2/25/2021 - National Hispanic College Fairs, Inc. South Midwest College Fair
- 3/12/2021 - Cuero HS Virtual College Fair, TX-34

Endowments for Graduate Students in STEM

USAFA does not have any endowments specifically focused on supporting STEM graduate programs. That said, USAFA does have endowments which support STEM focused graduate studies depending on the graduate education track of the recipient, a full list of endowed scholarships can be found at Attachment 2 (STEM options highlighted). USAFA graduates apply/compete for other, non-endowed scholarships and lab fellowships (Lincoln, Draper, etc.,) to attend STEM graduate programs such as MIT, Rice, Washington, Purdue, Georgia Tech, Carnegie Mellon University, etc.

Does USAFA have a pledge to Respect the Sexual identities of cadets? If not, what other actions or groups do we have in place that address respect for sexual identity?

While the United States Air Force Academy does support the dignity and respect of all cadets, the Academy does not have a pledge to “Respect the Sexual identities of cadets.” U.S. Air Force (USAF) policies provide for equal opportunity and treatment for all uniformed members irrespective of their sexual orientation. In addition, the U.S. Air Force ensures equal employment opportunity and treatment for all civilians regardless of gender identity or sexual orientation.

USAFA has many Cadet Affinity Clubs which focus on educating on aspects of culture, gender, diversity, inclusion, and respect. Currently, nearly 900 cadets participate in 8 Affinity Clubs: Hispanic/Latino, Native American Heritage, Pacific Rim, Korean American Relations Seminar, Way of Life (Black/African-American), Secular Cadet Alliance (non-theist, humanist), Spectrum (LGBTQ), and Schulte Assembly (Women). These clubs serve to:

- Help resolve concerns or complications experienced by the Cadet Wing community
- Provide guidance and support to project officers of special observance events
- Provide forums to enhance sense of belonging
- Provide support and direction to locally chartered special heritage committees and organizations
- Promote the recognition, achievements, and contributions made by the entirety of American society
- Promote understanding and tolerance among a diverse population

Regarding respect for sexual identity, the Academy supports the cadet Spectrum Club. This cadet-led club provides a support network for Gay, Lesbian, Bisexual and Questioning (GLBQ) cadets and allies, and creates educational opportunities for interested cadets dedicated to the retention, development, and commissioning of culturally and socially inclusive officers.

BACKGROUND PAPER

ON

THE USAFA PREPARATORY SCHOOL AND THE FALCON FOUNDATION

The United States Air Force Academy Preparatory School

- Purpose: The Air Force Academy Preparatory School provides an avenue for effective transition to the USAFA environment. It educates, trains, and inspires select enlisted personnel, minorities, women, recruited athletes and diverse candidates who are selected through the USAFA admissions process to increase performance in academics, physical fitness, and character development to succeed at USAFA. (Air Force Manual 36-2032, *Military Recruiting and Accessions*)
- The Air Force Academy uses the Preparatory School to sponsor candidates who need additional academic preparation and meet the needs of the Air Force
 - Sponsor candidates from underrepresented Congressional Districts
 - Provide a pathway to the Air Force Academy for Air Force enlisted personnel
 - Enhances academic preparation of individuals with physical abilities and leadership potential as defined in the Air Force definition of diversity (Air Force Instruction 36-7001, *Diversity and Inclusion*) in an effort to increase comprehensive diversity in the cadet wing
 - Candidates motivated to pursue Air and Space Force Careers
- Composition: ~ 240 Cadet Candidates per year
- Demographic makeup of the Air Force Academy Preparatory School Class of 2021
 - Total Cadet Candidates: 231
 - Women/Men: 65 (28%) / 166 (72%)
 - Hispanic/Not Hispanic: 31 (13%) / 200 (87%)
 - White/Race Not Reported: 103 (45%)
 - Asian: 17 (~8%)
 - Black: 67 (29%)
 - Native American: 3 (1%)
 - Pacific Islander: 10 (4%)
 - All minorities: 128 (55%)
 - First Generation College: 64 (28%)
 - Single Parent Family: 40 (17%)
 - Congressional Opportunity District: 47 (20%)
- Cadet Candidates attend the Air Force Academy Preparatory School located on the grounds of the Air Force Academy
- The USAFA Preparatory School comes under the purview of the Superintendent of the United States Air Force Academy
 - Civilian Cadet Candidates are enlisted in the United States Air Force Reserve

- Cadet Candidates receive full tuition and board
- Cadet Candidates receive a monthly stipend
- Selection: Selected from direct entry candidates who are not academically qualified for direct appointment to the Air Force Academy but possess strong leadership potential
- Appointment to USAFA after prep year
 - Meet USAFA guidelines for direct entry based on USAFA Annual Guidance for that class
 - Recommended by the Commander of the Preparatory School
 - Obtain a valid nomination
 - Approved by the Academy Board

The Falcon Foundation

- Purpose: The Falcon Foundation provides a limited number of highly motivated young people the opportunity to sharpen their skills for admission to USAFA by providing scholarships at a College or Preparatory School especially selected for this purpose.
- The Air Force Academy uses the Foundation to sponsor candidates who need additional academic preparation and meet the needs of the Air Force
 - Sponsor candidates from underrepresented Congressional Districts
 - Enhance diversity as defined in Air Force Instruction 36-7001, Diversity and Inclusion
 - Candidates motivated to pursue Air and Space Force careers with strong interest in aviation
- Composition: ~ 70-75 per year
- Demographic makeup of the Falcon Foundation Class of 2021
 - Total Sponsored Scholars: 75
 - Women/Men: 33 (44%) / 42 (56%)
 - Hispanic/Not Hispanic: 8 (11%) / 67 (89%)
 - White/Race Not Reported: 56 (75%)
 - Asian: 7 (9%)
 - Black: 0 (0%)
 - Native American: 2 (3%)
 - Pacific Islander: 2 (3%)
 - All minorities: 19 (25%)
 - First Generation College: 12 (16%)
 - Single Parent Family: 10 (13%)
 - Congressional Opportunity District: 4 (5%)
- Candidates attend one of five private preparatory schools, junior colleges, or schools which provide an additional year of academic and usually military preparation
 - Georgia Military College (GA)
 - Marion Military Institute (AL)
 - New Mexico Military Institute (NM)
 - Northwestern Preparatory School (CA)
 - Randolph Macon Academy (VA)

- Schools are vetted by the Falcon Foundation with input from the Air Force Academy
 - Falcon Foundation scholars choose the school they wish to attend
 - The Falcon Foundation provides a 50% scholarship which partially offsets school cost
 - The Schools discount tuition by approximately 25%
 - The family contribution is approximately 25%
- Selection: Selected from direct entry candidates who are qualified but not competitive for direct appointment to the Air Force Academy and possess strong leadership potential
- Appointment to USAFA after prep year
 - Meet USAFA guidelines for direct entry based on USAFA Annual Guidance for the class
 - Recommended by the Falcon Foundation school
 - Obtain a valid nomination
 - Approved by the Academy Board

USFA Endowed Scholarships Summary/Scholarship Accounts

Name of Scholarship	Description
THE EARL & MARION NUTTER TRUST	• Established in 1985 as part of the estate of Earl & Marion Nutter ◦ Managed by AOG; candidates selected by Graduate Studies Committee (GSC) • Recipients: Awarded, in alternate years, to the outstanding graduate with prior enlisted service (at least 9 months active duty in any branch of service) or to the top graduate in the order of merit not receiving another scholarship • Program of Study/Length: Master's Degree in a discipline approved by GSC; up to 21 months NTE total tuition • Funding: Restricted fund; balance available -- ~\$200K ◦ No funds paid out in 2018 (recipient received fully funded offer from Yale)
COLONEL FRANKLIN C. WOLFE	• Established in 1966 in honor of Colonel Franklin C. Wolfe ◦ Managed by AOG; candidates selected by Graduate Studies Committee (GSC) • Recipients: Awarded to an outstanding cadet in one of the Humanities • Program of Study/Length: Master's Degree in discipline approved by GSC; up to 21 months NTE total tuition • Funding: True Endowment (interest derived from principal); principal -- ~\$55K ◦ \$2,056 paid out in 2018 (IAW AOG's 3.5% pay-out rate)
GENERAL RICHARD L. LAWSON	• Established in 2000 by the National Mining Association (NMA) to honor Gen Richard Lawson, former Deputy Commander-in-Chief of the United States European Command and founding President of the NMA ◦ Managed by AOG; candidates selected by Graduate Studies Committee (GSC) • Recipients: Same as Humanities • Program of Study/Length: Master's Degree in a discipline approved by GSC; up to 21 months NTE total tuition • Funding: True Endowment (interest derived from principal); principal -- ~\$275K ◦ \$10, 017 paid out in 2018 (IAW AOG 3.5% pay-out rate)
GENERAL JOHN K. GERHART	• Established in 1984 by estate to honor Gen John Gerhart, former 4-Star and NORAD CC ◦ Managed by AOG; candidates selected by Graduate Studies Committee (GSC) • Recipients: Awarded to top cadet in French minor to study in France • Program of Study/Length: 2 year Master's Degree program in French Language and/or Culture • Funding: True Endowment (interest derived from principal); principal -- ~\$278K ◦ Nothing paid out in 2018; program inactive pending resolution of funding issue

<i>ALBERTA B. & SIDNEY E. HOLADAY</i>	• Established in 2003 by Bart Holaday, USAFA graduate and former Rhodes Scholar, in honor of his mother, Alberta ◦ Managed by Dakota Foundation; candidates selected by Graduate Studies Committee (GSC) • Recipients: Awarded to the top Rhodes candidate not selected for the Rhodes scholarship • Program of Study/Length: Up to 2 year program at Oxford's Exeter College • Funding: Bart Holaday's Dakota Foundation; funds dispersed directly to Exeter College
<i>GENERAL FOLLETT BRADLEY</i>	• Established in 1992 by Thomas Watson Foundation in honor General Bradley ◦ Previously managed by law firm; now managed by Endowment • Recipients: Awarded to top HKS candidate not offered full funding; selected by the GSC (every other year) • Program of Study/Length: 2 year Master's Degree program in Public Policy at Harvard • Funding: Fully funded; Endowment pays Harvard directly
<i>GENERAL ENDOWMENTS</i>	• Jane Mary Mengel '82 Memorial Fund ◦ Established in 2013 ◦ Purpose: To support Endowed Scholarship Program and the Graduate School Program ◦ Managed by Endowment ▪ Principal -- ~\$85K, Annual pay-out -- ~\$4K (based on 5% per MOU) • William Blake Smith '70 Memorial Fund ◦ Established in 2015 ◦ Purpose: To support Endowed Scholarship Program and the Graduate School Program; can also be used to support programs designed to prepare cadets competing for national and international scholarships ◦ Managed by the Endowment ▪ Principal -- ~\$381,000; Annual pay-out -- ~\$19K (based on 5%) • Bennett Estate Gift ◦ Established in 2016 ◦ Purpose: To support a variety of USAFA programs to include graduate scholarships ◦ Managed by AOG ▪ Estimated annual pay-out for scholarships -- ~\$35-40K starting with Class of 2017
<i>OTHER</i>	• Ethics & Character Scholarship ◦ Only when funds donated toward this particular scholarship ▪ Established with one-time donation in 2013, funds also received to support Class of 2016 recipient ◦ Funds managed by Endowment ◦ Awarded to a cadet from the Humanities or Social Sciences Division who has demonstrated outstanding academic achievement, moral toughness and ethical leadership.

Ms. MCCOLLUM. Yeah, that would be fabulous. I think the whole committee would like that. And I also know there are some high school programs too. So that would be wonderful, if you would share that.

Thank you for asking that question. It was a great question.

Mr. WOMACK, who took me to West Point, you are up.

PREPARATORY ACADEMIES

Mr. WOMACK. Thank you. Thank you, Madam Chair. Thanks for the hearing.

Thanks to the supes for what you are doing and for being with us today.

Henry, you would be pleased to know—and they have spoken to this. These prep schools are wonderful opportunities. I kind of call them red-shirt years, because they do some things that really prepare a lot of these young men and women for the opportunity, without just throwing them in as direct admits and putting them in a very difficult situation. I think, from a diversity standpoint, these prep schools are great.

Also, General Williams, I don't know what we call it, but there is also the ability to send some of these kids out to other schools, like Marion Military Academy, those kinds of places, for a freshman year and then recompute for a direct admit the following year, kind of like prep school but in a different setting. So, they are wonderful.

As a matter of disclosure, I chair the Board of Visitors at West Point, so I own that, and that forms the basis for some of my understanding of what goes on at these academies, particularly up there on the Hudson.

And I want everybody on the call to know, on this Zoom today to know, that the current holder of the Commander-in-Chief's Trophy are the Black Knights of the United States Military Academy at West Point.

Can I get a "hooah" on that, General Williams?

General WILLIAMS. Hooah, Congressman. Yes, sir.

Mr. WOMACK. All right.

ACADEMY CHEATING SCANDALS

I am going to go back to the issue that was brought up earlier regarding the cheating scandals, and I am going to give each one of the supes about a minute to fashion an answer. And, Chair McCollum, we may go over just a little bit.

It is one thing to have an attrition model, where you make a mistake, you are out of here. It is a whole another thing to have a developmental model, where we take young men and women from society, bring them in as freshmen, and then begin the grooming process. Man, if all these kids were ready to be lieutenants, we wouldn't spend 4 years trying to groom them. I am a big believer that, when they come in, if they, you know, skin their knee, they make some mistakes, that we work with them.

And I am going to start with General Clark. Tell me what you have at your disposal, what you do, to help kids—because all the academies have had, you know, a bout with a cheating scandal, many thanks to COVID. But tell me what you do in terms of bring-

ing these kids through an honor program and reacquainting them with the values that we espouse at the Academy.

General CLARK. Yes, sir. Thank you for that question.

And I know that I can speak for my fellow superintendents that we are all approaching a developmental model of honor rather than a fear-based or a punitive model. Now, there are, obviously, punitive elements to our honor systems, but, like you said, we have to bring our cadets—when we bring them in, it is a matter of developing them to that honorable-living capacity or desire that we have.

So we have a very robust honor education system that starts from the day that they walk into the Academy. And it consists of instructional opportunities, different mentorship opportunities. And it goes all the way throughout their time as cadets.

Now, if they are found in violation of the Honor Code, especially in the early years, we have a strong probationary program, that we help them to develop, help them to recognize where their shortfalls were, and to bring them to a place where they understand how to continue to live honorably and abide by our code.

We have had a 95-percent success rate, meaning cadets who get into that probationary status, they never have another incident or issue with the Honor Code. So we are very proud of it.

The developmental aspects are key and critical, and we want our cadets to respect, not fear, the Honor Code.

Over, sir.

Mr. WOMACK. Admiral Buck.

Admiral BUCK. Likewise, sir, we have an honor concept at the Naval Academy.

I will address that we sensed that we had a cheating issue on a final exam that was administered just this last December, a couple months ago. I am right near the end of concluding the investigation of that to better understand the magnitude and appreciate exactly what happened. It was with a younger cohort of midshipmen, the sophomores, with the physics exam.

Like my colleagues, we completely embrace the developmental model. I would suggest that you probably get a little bit more understanding when you are a freshman or a sophomore, but as you spend more time in your 47-month journey at the Naval Academy immersed on a daily basis in a culture of character and a culture of honor, that our expectations of you, as you get closer to entering the fleet as a junior and a senior, that there may not be as much of a look for remediation and second chances.

But we do want to look at each case individually. If you are found or alleged to have violated our honor concept, your case goes in front of a midshipmen-led honor committee. They, the midshipmen, your peers, make a determination of your guilt or your innocence. And if it comes out that you are guilty, you then go into consideration by the commissioned chain of command, whether you are chosen for remediation and retained or whether you are recommended to be separated from the Academy.

We share almost the exact same statistic as Air Force. We have a 95-percent success rate of those that enter the honor system for a violation once in their time here, they don't ever enter it again. And they matriculate very well, and by the time we release them

to the fleet, we are confident that we have some honorable young leaders and—you have heard us say—leaders of character.

Mr. WOMACK. Yeah. Well, look, thank you, Admiral, and I am going to—I never want to speak for the superintendent at West Point, because he speaks well for himself, but I will save the time on this one.

Let me just say this for the benefit of my colleagues: You will hear from time to time from graduates of these academies. We call them old grads, for the most part. And many times the opinions of the old grads are more based on attrition models than they are developmental models, because they have been through it.

So I think we have to be very careful, Madam Chairwoman, to be terribly judgmental, particularly when these kids come to these academies as freshmen and particularly when they come from some less-than-ideal circumstances.

And that is why I congratulate each of the superintendents for what they are doing regarding this developmental model.

And I will yield back my time.

Ms. MCCOLLUM. Thank you.

Mrs. Kirkpatrick.

SEXUAL HARASSMENT

Mrs. KIRKPATRICK. Thank you, Madam Chair and Ranking Member Calvert.

I have a question about sexual harassment. So, when I look through many of the programs built to combat sexual harassment and assault, a lot of them focus on service provided to victims after they suffer abuse. I agree it is absolutely critical that we provide every possible resource to survivors, but I do believe that we are overlooking opportunities in prevention.

Lieutenant General Williams, you discussed the lack of relationship and interpersonal skills that have been in some young cadets, which can enable corrosive behaviors to take root.

Can you share with us how the academies are prioritizing training focused on developing healthy relationships to prevent sexual assault and harassment; and if you are looking outside of these internal-created programs to civilian entities that specialize in developing these skills in today's young adults?

And that is for everybody on the panel.

General WILLIAMS. Yes, ma'am. Thank you for your question.

I will tell you that leadership matters in this space. And my secretary, the chief of staff of the Army, the sergeant major of the Army have been very clear in terms of how do we get at this.

When we brought our cadets back from winter leave in January, I took a look at the Fort Hood independent review, which I know many of the members are—all members probably are aware of. And we talked to every single cadet when they came back from the leave.

I led off the session, and then I had my experts, my SHARP director and others, talk. And I said, this isn't about Fort Hood, this could be any fort, this could be Fort West Point. And we talked to them about personal courage and what it takes to hold each other accountable as peers here at the United States Military Academy.

So I think leadership matters—I know it matters. And I know that all of the corrosives that the chief talks about and the Secretary and the SMA and that we also take on here, the only way to combat that, ma'am, is for peer leadership and for leadership at the very top.

I will also tell you, we piloted last summer a relational character course. We are going to expand it this summer to talk exactly about what you mentioned in there, how do we relate with each other.

When the cadets came back last summer, our cadets were brilliant in this space. We have trust and peer leaders in the cadet companies, and they are the ones that are at—they are resources for young men and women to talk to.

So we allowed our cadets last summer—we will do the same thing with the new classes that come in—a time, the space, to talk about tough subjects. It really is about these young men and women looking each other in the eye—I know it is difficult during these COVID experiences here, but looking each other in the eye and saying, “Look, I care about you, and I expect you to treat me with dignity and respect.”

And so that is what we do here at West Point. We provide them the opportunity and the space to talk about it.

But I am in this space and I am not leaving this space, as the superintendent of the United States Military Academy.

Thank you, ma'am.

Admiral BUCK. Congresswoman Kirkpatrick, Sean Buck from Navy.

Very like what General Williams just said, the number-one way for us to get after preventing sexual assault or sexual harassment is through peer leadership.

What we have found over and over again in the formal surveys that are given at the Naval Academy and all of our academies are that our midshipmen and our cadets, they trust the commissioned leadership at the academies, they trust the senior enlisted leaders, but they are having a difficult time trusting their peer leadership. Most of the sexual assaults over time at my academy have been midshipman-on-midshipman. And that is very distressing, that it is blue-on-blue.

So, in our prevention efforts, which is now the preponderance of the effort in the military across all the services and across all three of our academies, is getting after prevention and strengthening the confidence and the ability of our midshipmen leaders to lead themselves, with adult supervision. That is where we are going to nip it in the bud.

You did ask one particular question, if any of us are leaning on external resources and innovation and creativity from maybe other university systems around the country or any other asset that might be helping organizations get after sexual assault. And, yes, ma'am, we are.

There is a very robust investment by the Department of Defense and all of our services to allow us to do best practices, wherever they may be, to get after this scourge and make it go away from our academies, ma'am.

General CLARK. And, ma'am, I don't know if—this is General Clark. I don't know if—I know our time is up—if you would like me to make a short statement?

Mrs. KIRKPATRICK. Yes, if you could, please.

Ms. MCCOLLUM. Yes, 30 seconds.

Admiral BUCK. Yes, ma'am. I will just say that we are in the same mode of thinking as both Navy and West Point.

And we look at a sexual assault prevention framework, where we can actually address this issue with our cadets, both pre-admission through programs that we have them involved in—we work with parents on alcohol-related issues so that parents can work with their young high school graduates before they come.

We work during their time here throughout. We have great programs that address healthy relationship training, that address personal skills, and that also address bystander intervention skills for our whole cadet wing so that nobody stands by just to let these horrible events happen.

And we also have a series of pilot programs that allow us to assess each program that we implement so that we understand exactly the type of effect we could expect, but also to use our time wisely so that we can target exactly the problems that we have to address in this space.

So I think all of us are committed to decreasing and, in fact, defeating this scourge and making our academies and our forces better.

Over.

Ms. MCCOLLUM. Thank you so much.

I am going to do a bit of housekeeping before we hear from Mr. Aderholt's question.

Mr. Ryan, you are present. I am going to go and vote. The staff will send you the list of the next speakers. It is Aderholt, Aguilar, Carter, and then the rest are listed.

I know we are in good hands, and, with that, I will be going to vote.

Thank you, sir.

Mr. Aderholt.

COVID-19 VACCINES FOR STUDENTS

Mr. ADERHOLT. Thank you, Madam Chair.

And thanks, everyone, for being before the subcommittee today.

I have been in contact with my colleague, Congressman DesJarlais of Tennessee. And one of the issues that has come up is, I was just wondering if you could provide a little bit of a timeline about the COVID-19 vaccines that will be available for the academy members.

I know a couple of you may have mentioned that a little bit in your comments earlier on. But as far as a timeline as to when you foresee the members being able to actually receive the shots, or if they have started receiving the shots, could you please just give us a brief outline as far as what you are looking at right now at your particular academy?

General CLARK. Yes, sir. This is Lieutenant General Clark. I can start with that one.

All of us, all three of us, General Buck, General Williams, we talk regularly about our issues with COVID-19, and I believe that we are all in very similar situations as far as the impacts of it on our mission, how we are testing, and then, now, vaccines which have come our way.

We are all adhering to the DOD schema, the Department of Defense schema, that lays out the priorities of who should get the vaccines when. So, it starts off with first responders; it cascades down to mission-essential members and deployers; it gets into medical beneficiaries; and then our cadets actually fall into the lowest category because they are all healthy others. They are the most healthy of our population, and they fall into the lower level of that schema.

So we all get vaccines that are filtered to us. We get them periodically, as is the rest of the installations in at least the Air Force and the Space Force, and I think the Army and Navy are the same. We fall into a system that, when they come, we execute the vaccines and get them into arms as quickly as possible but in accordance with the schema that the Department of Defense has given us.

So, right now, for us at the Air Force Academy, it is primarily our first responders, our staff and faculty who we consider mission-essential who have been the folks that have gotten the vaccine so far. Eventually, though, as we get more vaccines into arms, our cadets will be recipients of that vaccine.

And I will yield the floor to my other superintendent colleagues. Over.

General WILLIAMS. Congressman, we are getting fantastic support from the Army and DOD in this space. To date, we have vaccinated just over 4,000 here at West Point. That is not the corps of cadets. That is, much as Rich laid out, the framework of first responders and such and folks that are in vulnerable populations. I have 4,400 cadets here, but in the community writ large at West Point, about 8,000 in the community and such.

So we are on path. Rich laid it out in terms of, when it is available, we will do it. As you know, we are under emergency use, so we cannot mandate. But, sir, we have very high—the cadets want this vaccination. It is well over 90 percent that are going to—so when we get it and when it is available, I am confident that we will be vaccinated here at the United States Military Academy and contribute to Army readiness as we go forward.

Mr. ADERHOLT. Thank you.

Admiral BUCK. And, Congressman Aderholt, what I have is done is—I have the same schema; it is a DOD schema. It is going well. I would suggest it is slow and steady. We went after the same prioritization as General Clark articulated to you.

I have given my Navy a timeline for when I need to have the midshipmen vaccinated, because the way we do our summer training is I will send the vast majority of midshipmen out to the fleet to embark on operational ships, submarines, squadrons, Navy SEAL teams.

And our Navy has prioritized the operational forces first. They are getting vaccinated. They have a very safe and healthy bubble. And for them to be willing to accept our midshipmen from the

Academy as well as midshipmen from NROTC universities around the country, we need to vaccinate them prior to the summer training started.

So we are anticipating our summer training—it first opens up around the 15th of May. I need to start vaccinating that small cohort of midshipmen around the last week of this month, March. And then I hope to be able to start vaccinating all the rest of them in the first 3 weeks of April.

And that will allow them to get through the two-shot schema, 4 weeks between them, and then develop the immunity with 2 weeks after that second shot, and they will be an up-and-ready round for the fleet. And all the captains of the units out in the Navy fleet will be ready to accept them, and we can conduct summer training, which is such an important aspect of the development of a midshipman.

Over.

ACADEMY PLEDGE

Mr. ADERHOLT. Mr. Chair, I know my time is up, but if I could just ask for the—I wanted to ask about one other issue, and they can respond on the record.

Of course, I believe in mutual respect. That is important for all our cadets, no matter what service they are in. But a little bit—this question about this pledge to respect the intersexual identities of servicemembers at the Naval Academy. Like I said, it is my understanding that mutual respect and leadership traits and leadership principles, that is already a part of the program and should already be well drilled in to these cadets.

And I just want to just inquire about that. And since my time is up, you can reply for the record.

Mr. RYAN [presiding]. I appreciate that, Mr. Aderholt. Thank you.

Mr. Aguilar.

COMPOSITION OF FACULTY

Mr. AGUILAR. Thank you, Mr. Ryan.

And I appreciate the chairwoman putting this hearing forward and, superintendents, for your work.

Gentlemen, I wanted to ask a little bit about the faculty. Could you describe the composition of your faculty at each academy? What is the mix of civilian and military professors, and how diverse is the population, and the types of qualifications, and if tenure applies?

I just wanted to get a better understanding and hear that with my colleagues. If we could start with Superintendent Williams and then proceed, that would be appreciated.

General WILLIAMS. Yes, sir. Thank you for the question.

Yeah, so our staff and faculty here are diverse, about 70 military/30 civilian. We have been on that path for some time.

I will tell you that we have—at the core of it are our great department heads. We have 13 department heads. And these are men and women who are Army colonels who have devoted their life to their particular discipline and spent some time here. That is one part of the triumvirate here.

And then our great Army civilians, our senior Army civilians, who have been recently tenured in the last few years, who also add to the academics. They partner with those department heads.

And then there is this rotational part of the faculty that are young captains and majors who provide intellectual capital back to our great Army. So, this is Captain Major Williams. You know, they are midway through their career. They go back, receive a Ph.D., teach here for 3 years in a utilization tour, and then return intellectual capital back to our great Army. And that is usually about a 5- and sometimes it could be a 6-year tenure.

And so those are the different elements. You have more senior tenured professors, civilian; you have senior tenured colonels who have devoted their life to this academic profession; and then our rotational faculty, who are younger officers who will return also to the Army and be the battalion brigade commanders for our cadets.

So the relationship and the sense of ownership that our young faculty have with these cadets is a vital part of how we go forward.

Thank you for your question, sir.

General CLARK. And, sir, Lieutenant General Clark from Air Force. I will add on.

We are about 60 percent military and 40 percent civilian in our faculty. And, like General Williams stated, our military faculty really bring an operational flavor to the academic curriculum; and, of course, our civilians, many Ph.D's, many from other areas of academia, who help us to bring that perspective to our program.

I want to also highlight, though, we have coaches, we have air officer commanding who are in charge of each cadet squadron with our academy military trainers, our enlisted members, who help to lead those squadrons, who also bring the perspectives that our cadets need in their development.

I will say, one of the things that we are working very diligently on is to increase the diversity of our staff and faculty and to ensure that not only our cadets look like America but that our staff and faculty represent that as well. That will be a great benefit to our cadets' development, and we will continue to work that.

Thank you, sir.

Admiral BUCK. Congressman Aguilar, we at Navy are a little bit different than my other two sister academies. We are traditionally 50/50. Today, as I speak to you, we are 53 percent civilian/47 percent military professors. And it is a total of 600 faculty here.

In that uniformed group of faculty, 19 percent of them are women, 19 percent of them are men or women of minority. We continue to look at our hiring practices across the whole faculty to try to develop a diverse faculty workforce there so that the young men and women that go to school here look and see men and women that may look like them.

We have a tenure program here. So we have tenured professors, full professors, associate professors. And then each year, to fill the gaps, we hire a fluctuating number of adjunct professors to fill in where we may have holes on one particular year. And those professors come from a very diverse background, sir.

Mr. AGUILAR. I appreciate the answers, gentlemen, and would just, you know, continue—and I specifically appreciate Superintendent Clark talking a little bit about the continued need to re-

view hiring practices and to better reflect the diverse population that we want the academies to serve.

So thank you, gentlemen. I know this is an evolving issue, and I appreciate your openness to these questions on this topic.

Thank you, Mr. Chair.

Mr. RYAN. Thank you, Mr. Aguilar. I appreciate you asking those very important questions.

Judge Carter.

Mr. CALVERT. Mr. Chairman, before that—

Mr. RYAN. Yes.

Mr. CALVERT. Judge Carter is going to cover for me. Unfortunately, I have a conflict. So the judge has got it from here. Thank you.

Mr. RYAN. Okay.

Judge Carter, you are also up for your 5 minutes of questions.

Mr. CARTER. Thank you for recognizing me.

And thank you to the superintendents for being able to be here and talk to us today. We are learning quite a bit.

I am going to ask a couple of things that go back when we were back talking about cyber. With the concept of all joint command and control, how are you attracting and retaining qualified civilian faculty in the technical disciplines? And what type of funding do you need to ensure that the U.S. maintains a resilient cyber force within the Department of Defense and with our intelligence partners? What kind of help do you need?

General CLARK. Yes, sir. I can start off with that. Lieutenant General Clark.

We have majors and many classes throughout our entire curriculum that address our cyber needs. And as both General Raymond, our Space Force commander, who says that every guardian has to speak digital as their language, they have to understand the cyber domain if we are going to be able to execute joint all-domain command and control, and General Brown, in his charge for accelerating change or lose, has emphasized that as well. So our majors in cyber, every course that we teach in cyber is critical for us.

We are also breaking ground this month on our Cyber Innovation Center, which is an opportunity for us to bring in partners not only from the broader Air Force and Space Force but also from industry so that our cadets can have the opportunity not only to learn in academics but also to experience the real-world needs and address real problems.

One of the areas that we could use help with, though, sir, is in our information technology. Our IT is woefully behind where we need to be to be, I think, a provider of cyber excellence.

Right now, we have needs for immediate funding for this year, funding unfunded requirements. Plus, we need money into the POM, because our network is not the same network that the broader Air Force uses. We are on a dot-edu, whereas the Air Force is on a dot-mil. The dot-edu allows us to collaborate, it allows us to innovate, and it connects us with researchers and other universities that we need to be a world-class organization.

So we don't fall under the normal IT funding that the rest of the Air Force comes under. So that funding that we need not only now

but into the out-years is vital for us. In fact, it threatens our accreditation.

During COVID, we have recognized our weaknesses as we have gone to more virtual classes. So we have great needs, I think, from a fiscal standpoint, to allow us to meet our aspirations to be that school of cyber excellence.

So I will stop there, sir, but we appreciate any help that you can provide to move us forward with our IT so that we are the provider of cyber excellence.

Over.

Mr. CARTER. Anyone else?

Admiral BUCK. Congressman Carter, the Naval Academy, we are proud to represent ourselves as a center of cyber excellence. We aggressively got after this about 12 years ago and committed ourselves to doing so.

And, just this year, on my tenure, we opened up, I believe, one of the first cyber operations center buildings in the country, and we brought the capability here to be able to teach our midshipmen right from the ground floor at the Top Secret, Specially Compartmented level. And, as you know, the topic of cyber, it is very unremarkable to teach it at the unclass level.

So, now, when these young men and women graduate from the Naval Academy, having been exposed to cyber across their entire journey here, they are much more capable, much more aware, much more cognizant of how to fight and work and live within the cyber domain.

We take on an all/many/few concept here. Every single midshipman takes two courses in cyber. We present many opportunities for many to be exposed to cyber through lectures and conferences and research projects. And we now have a cyber operations major, in which 75 midshipmen matriculate to each time—each year entering class.

If I were to tell you what we have trouble with in attracting the best faculty to teach in cyber, it is being able to pay a cyber professor on a Federal pay scale. That is very difficult to compete with what they can do out in private industry, sir.

I am not so sure how to crack that nut other than to present them a really, really rewarding experience teaching fine young men and women at the Academy who are passionate to learn. We now present world-class facilities. But you do know that it would be very difficult to present a Federal pay scale to someone steeped in cyber who can do a lot better on the outside.

Over.

Mr. CARTER. Anybody else?

General WILLIAMS. Yes, sir.

Sir, three components: the brick-and-mortar aspect, as I mentioned earlier, the Cyber Engineering Academic Center, which will transform the very face of West Point. I know when—we look forward to welcoming you back again, sir; you were here 2 years ago. That will be transformational.

But I will tell you, while we are waiting for that to mature, we enjoy efficiencies with the Army Cyber Institute, which is just outside West Point. And we attract right now the best and brightest from our civilian counterparts. So that becomes a skunkworks for

our cadets to work on their projects that they are working on, but also to be informed by the best and brightest in the cyber energy that we are realizing every single day.

And in terms of our actual pedagogy, sir, we have six academic majors—computer science, applied statistics and data science, electrical engineering, information technology, and system engineers—producing about 100 cadets each year who are motivated, inspired to winning and defeating our adversaries in cyberspace.

Mr. CARTER. Well, thank you. That is all good information.

I know I have gone past my time. Just curious, and you might send me some information, about any endowments you have for graduate students in the area of STEM which would fit into our concept of future warfighting. I think that is important.

Remember, we are the Appropriations Committee, and we are interested in how we can help, and that is why I ask these funding questions.

I will yield back.

Mr. RYAN. Appreciate it, Judge.

Mr. Crist.

RACISM AND EXTREMISM

Mr. CRIST. Thank you for being here, to the three of you.

You know, in the military, I have been reading news accounts lately that the academies are grappling with White supremacy, racism, and extremism. And I am curious what actions the academies have taken to address any and all of these issues.

Please. For any one of the three of you.

General WILLIAMS. Sir, General Williams at West Point. I will start.

So, sir, we have, as a part of—back to my earlier comment about what our chief refers to as our corrosives: sexual assault, sexual harassment, racism, and extremism. So the approach we have taken here, as I mentioned before, is how we have elevated character.

What I don't want here at West Point is that we have sort of this whack-a-mole approach. We have to approach this comprehensively from an interdisciplinary standpoint. This is about treating each other with dignity and respect. We start there and we end there in our small squads, peer-to-peer relationships.

And so, sir, what we do, to answer specifically your question, what we have been doing, we are on our fifth honorable living day. So, in 2 weeks, I will stand down the entire Academy—the cadets, the community. There will be no work, there will be no sports, no one will go to class. And we will focus on this very subject. The Secretary of Defense has given us some interim guidance on how these discussions will ensue, and I know my wingmen are working on it as well.

But that, for us, is just a preliminary step. We will take it much further. The key to this, sir, is that these young men and women look each other in the eye and face this issue and talk to each other about this. So we will provide the space and the time for the Academy to come together and talk about extremism.

Thank you, sir.

Mr. CRIST. General, if I could follow up—and thank you very much. I appreciate that.

So when you stand down the entire Academy and you discuss this, what is, sort of, the forum, format? How do you do that? What do you talk about? Have you done one yet already?

General WILLIAMS. Yes, sir. Not specifically in an extremism space, but in these other corrosives, we have done it.

So the cadets actually demand them; they ask. They are a vital part of it. The cadets help us design what it is going to look like.

So it usually starts in our stadium, sir, with myself and the other senior leaders. And I stand up and talk about our values and what is important and why it is important to be in this space. So I will start off the day.

And then, normally, what we found in the last one—we did one on racism last fall—we will have a cadet panel. So the cadets will be up there, and they will share their experiences with their classmates.

Mr. CRIST. Right.

General WILLIAMS. And there will be real, raw conversations which will pull at the emotive strings a little bit.

And then, from there, we will bring in, sometimes, experts from the field, sort of referring back to the earlier question.

But the most important, vital part, sir, is the small group, not at the macro level but at the micro level, at the squads and platoons, facilitated by our great TACs and TAC NCOs and our professors facilitating those questions. Because our young men and women are at different parts of their 47-month journey, and they are going to need a little assist.

And so they will have these discussions, but then our folks who have—our majors and our colonels and our generals and sergeants and coaches will be part of this vital, active conversation, which will help them fill in the gaps if we need to, sir.

Mr. CRIST. That is excellent.

It sounds like to me—I have these yellow wristbands that I wear every day, and it says, “Practice the golden rule every day.” And, of course, the golden rule is “do unto others as you would have done unto you.” And, to me, that is the ultimate in character, that you treat people with mutual respect, with decency, and that you comport yourself that way. I try to do it every day. I don’t always succeed, but I try.

And it sounds like, to me, that that is sort of the road you are going down when you stand down the Academy for a full day—no class, no sports, no nothing, except talking about character and decency and goodness.

General WILLIAMS. Yes, sir. If I could follow up, absolutely, sir, that is exactly the heart of this. Nothing else matters except this.

And then we have follow-on—we are not so naive to think that that one day is going to make a difference. It is going to send a clear and unambiguous signal to everybody on the post that the leaders care, but then there is the follow-up action. What is the action plan? What do we do after that day? And that is what we are finding.

And we work with our cadets. And the cadets lead in this space. Our trust in peer cadets absolutely champion this space. And we

look forward to talking to you more about that, sir, in the future. They do really well in facilitating these tough discussions.

Mr. CRIST. General, I appreciate your answer. I am out of time. I will yield back. But God bless you, and thank you.

Ms. MCCOLLUM [presiding]. I am back. And I understand it is Mr. Diaz-Balart's turn to ask a question.

CHARACTER DEVELOPMENT

Mr. DIAZ-BALART. Madam Chairwoman, thank you so much.

All of you have spent—and I think it has been very productive—talking a lot about sexual assault, which is so important, and also the instances of cheating, for the lack of a better term.

And, obviously, a big part of what you all do—and you do it better than anyone in the Nation and, frankly, anyone in the world—is instill, you know, character and character development, but you do a lot of that through peer-to-peer leadership. There was some conversation about that.

Right now, with COVID and everything else—and we have seen the increase of incidents, for example, you know, of cheating, et cetera—but how are you able to instruct, you know, get that character development, when, in fact, you know, we are limited on the peer-to-peer interaction?

And anyone who wants to deal with it, or maybe all of you.

General CLARK. Sir, Lieutenant General Clark. I can start with that.

The character development—and here at the Air Force Academy, we have a leader-of-character development framework that our whole program is focused on, because that is the core of what we do. And we are able to actually do things virtually that we haven't been able to do in a world where we weren't as virtual.

For example, we just had a National Character and Leadership Symposium, where we had dozens of leaders of character from around our country, regardless of—some were military, some from the civilian sector. And what they do is, they are able to share with our cadets and other partners that we invite into this symposium to give them examples and to help them understand what it means to be a leader of character, what it means to live honorably. And the theme for this year's symposium was "warrior ethos."

And we not only reached our whole cadet population, but we reached thousands of others outside of our population. But it is these kinds of examples and stories and opportunities for the cadets to see what that means.

But, also, in our internal programs and processes, like you mentioned, peer-to-peer education is critical, but the virtual world allows us to reach people in different ways. And I believe that we are able to continue our program and still focus on our leader-of-character framework to develop those leaders that are the core of our mission.

Over.

Mr. DIAZ-BALART. Is there a way to kind of know if that is as effective, you know, the whole virtual world, as effective as one-on-one, you know, human interaction when it comes to character development?

And, actually, the same thing on, you know, obviously, you know, sexual assault and sexual harassment, which is, you know, the worst possible infraction, right?

So is there a way to know if—can we track how effective this is, this new reality of virtual, you know, contact versus, you know, human-to-human contact?

General CLARK. I think it is hard to know, sir, what, you know, the end results would be and is it as effective. My gut tells me that person-to-person, face-to-face contact, in many instances, is better. But when we are limited in the ways that we are, we are doing the absolute best that we can.

And I think that at least the feedback from our cadets is that they still have those opportunities. And we can't miss a beat. We don't have time to rest just because COVID is here and is a part of our lives now. We still have to develop these leaders, because we still have to graduate these cadets when their time comes so that they can go out and serve.

But I think your point is well-taken. Sometimes face-to-face is just better. That human interaction helps us. But we are working to overcome some of those challenges.

Over, sir.

MENTAL HEALTH

Mr. DIAZ-BALART. And, lastly, really, on the same issue, I imagine that, also, you know, it is more difficult to kind of find out, track, frankly, discover issues of mental health when you don't have, again, the one-on-one interaction.

So I am assuming that those are all challenges that you all are—I know that you are facing them, and I know that you are doing the best job—probably the best job in the country. But it would be interesting to kind of figure out what you are looking at, what is working, what isn't working on this new era that you all have kind of inherited of having to do this stuff virtually.

General WILLIAMS. Sir, if I could comment, I will tell you that a lot of what Rich talked about in terms of setting these frameworks—my dean does a great job with our professors here to set a framework that they can operate in. So she goes through a very deliberate process of training up and calibrating our leaders.

And I will give you an example. Last year, “study of war and the human condition” were the threads that linked all, whether you were on the STEM side or the humanities side. So she sets the framework out, and our great officers and civilians here move in that.

Next year, the theme for next year is “ethical leadership in a diverse world.” So they now have the template, which they can then spend the spring and the summer preparing that way.

And back to the metrics or measuring, I will tell you, one technique we use in the honor thing—and Congressman Womack mentioned it earlier—but our Special Leader Development Program, allowing cadets—you measure on the front end of their 47-month experience, and then you measure on the aft end of their 47-month experience, and you can see the maturity in their writing in terms of how they think about what is happening to them, what is happening in the world around them.

That is how you develop a lot of these metrics, which are very hard to tease out and are things that are a little more opaque.

INFRASTRUCTURE REPAIRS

Ms. MCCOLLUM. I would like to talk about facilities for a few minutes. So, when I reviewed the information from my staff regarding the needs and repairs on some of the items, they have been listed there for quite a few years. The committee had held a service academy hearing 2 years ago, and it really appears that items are still there from 2019. They haven't been addressed. They have either been not funded or underfunded.

Let me give you an example. Support facility Camp Buckner, where I was 2 years ago, we saw serious issues with mold. Mr. Womack was there on that. Or the utility bridge at the Naval Academy, that urgently needs to be replaced, and if we lose that, that will be a catastrophe.

So I am going to press the secretaries of your services on those questions, because these issues can't lay dormant. And, you know, 10-, 20-, 30-year plans for some of this stuff is putting a lot of hope and a lot of wishes that they are going to move forward.

So I am going to ask you gentlemen to take a minute and, you know, tell me why you think these delays remain and why these projects haven't been addressed in a timely fashion.

Because I am going to ask your leadership why they aren't a priority. I am not going to ask you why you don't think that they are a priority with your leadership; I am going to ask them. Because we think it is a priority.

So we are going to have some questions that we are going to follow up on, but we just have a minute right now, and I have a page of questions on these projects that the committee staff is going to be sharing with you, and then I will share with the whole committee when we get the answers back.

But what is the hold-up on these projects not getting done, in your opinion? Because I think Mr. Womack and I and others have made it very clear in our conversations with the service heads that we are looking to see that these projects be finished.

And maybe I will start with you, Mr. Buck. Because letting that bridge wait too long is, in my opinion, a very unprofessional, dangerous, and foolish thing to do.

Admiral BUCK. Thank you, ma'am, for that question and the opportunity to give a response. And I don't know whether my response mirrors my colleagues, so this is just unique to the Naval Academy and to our Navy.

Since 2010, my budgets for sustainment, renovation, and modernization have remained pretty constant, without recognizing the growth that we have had here of new construction. And then, when we hit sequestration in 2013 and a significant reduction in budgets, our Navy as a whole had to reprioritize what was most important to the infrastructure for the whole Navy. And we all were affected by that, no matter what installation or where we were located in the world. And the Naval Academy wasn't immune from that.

So we put on hold—as to use your word, we put on hold some really important projects to either renovate, modernize, and we began to focus just on sustainment, and sometimes sustainment

with Band-Aids, just to get us through with leaky roofs and things like that, but not a whole frame-up restoration where it might be needed.

You have mentioned one of my top three priorities. The utility bridge is in need of replacement. MacDonough Hall, which is the center of my physical fitness mission at the Naval Academy, is on the chart right now to be renovated, and we hope that funding remains that has been given to us.

Our Navy, in fiscal year 2020 and fiscal year 2021 that we are enjoying right now, revitalized our infrastructure budgets. And we have been healthy and been able to begin to plan back toward improving and addressing our infrastructure projects.

What I want to leave you with and the committee with is, we need to be sure that we have a consistent budget in each of the out-years. That would be really important to our planning effort and our ability to know that we are going to get after our highest-priority infrastructure projects.

Ms. MCCOLLUM. Mr. Clark, if you take a minute, you were impacted by the recent storms along with some other projects that you had. Some of the issues with your pipes, is that being considered a priority to be repaired now by the Air Force to help you out with that?

Sir, you are on mute.

General CLARK. Can you hear me, ma'am?

Ms. MCCOLLUM. I can hear you now, sir.

General CLARK. Okay. I am sorry.

Yes, it is a priority for our Air Force. But I will say, overarching, our enterprise is constantly sustaining, restoring, modernizing across the entire Air Force. We do receive, I think, priority commensurate with the rest of the Air Force and Space Force mission, and we have been in a steady, I think, restoration and modernization mode for some time.

As you stated earlier, all of our buildings were built at the same time, back, you know, in the sixties and the fifties. So we are seeing a lot of the issues that are arising; they all arise in about the same timeframe. And our Air Force is responsive to help us with this. It is just the problem is pretty significant and we have a constant drumbeat.

But I would say that we are right in line with the rest of our Air Force as far as SRM goes. So we could always use more help from a budgetary standpoint, because there is a lot to do here, and we appreciate anything you can do for us.

Thank you, ma'am.

Ms. MCCOLLUM. Mr. Williams, I am going to let you have the last word, because I mentioned your facility first, and Mr. Womack and I have seen it firsthand.

Is that a 10-year, did you say, repair for those buildings? Some of them have mold, they have water issues and that. Is that a 10-year spread-out that they are giving you to replace the buildings?

General WILLIAMS. Chair McCollum, thank you. And I appreciate your continued focus, as you and Congressman Womack were out here 2 years. We actually were helped a lot by you coming out here to Camp Buckner.

The Army has fully endorsed and integrated all aspects of our plan. We came up with a plan shortly after your visit, the USMA 2035 plan. Fiscal year 2021–2030 facility investment plan, which I worked very closely with AMC and senior Army leaders, is fully endorsed.

And with respect to Buckner, we are working right now. In a few weeks, we get after the barracks and the mold. It is a two-phase project. The first part of the phase is focused on the barracks that we took you in and you saw that mold. The second phase is a 5-year MILCON plan that gets at both where the task force that comes and participates with the summer training, Camp Natural Bridge, and also Camp Buckner.

We feel very comfortable with what the Army has currently given us with respect to funding associated with Camp Buckner, ma'am.

Ms. MCCOLLUM. Well, we are going to follow up and make sure that, you know—there is a reason why we became appropriators. It is nice to have great ideas and want to do all the wonderful things the authorizers have, but without the resources to do it, they remain just great ideas.

General WILLIAMS. Thanks, Chair.

Ms. MCCOLLUM. Thank you. We will be following up on that.

Mr. Ryan, thanks again for helping me out.

HEALTH AND WELLNESS

Mr. RYAN. Thank you, Madam Chair. I almost kept that gavel, you know.

Ms. MCCOLLUM. You have your own.

Mr. RYAN. I appreciate it.

I just have one question. And thank you for all the answers and thoroughness.

I want to talk to General Clark for a second about the Academy, and you guys conducted a test of the new campus dining card, if you are familiar with this.

And one of the issues that we have been working on a lot really is combining the idea around health and wellness, especially around diet, because we look at the cost of obesity, diabetes. It is more than a significant cost for us around healthcare for our Active Duty, and that makes its way into our VA budget as well.

And, really, we want to try to get to the root issue there, and that is really teaching our men and women in the academies, you know, what to eat and how to eat and how to really function at a peak level. And they are, in so many ways, not different than many college kids, who—all of us who have been to college know that it is not necessarily the best diet in college.

So I want to ask you about the Mitchell Dining Hall facility. The cadets were allowed to use their meal entitlement outside of the Mitchell Hall dining facility at venues offering healthier offerings instead of going out-of-pocket for other meals. It is generally known that, at the service academies, they do not eat all their meals at the campus dining facility.

We have heard that your program, not surprisingly, was extremely popular with the cadets who were fortunate to be a part of this test, but we heard that the test was cut short. And so if you

could just speak in the next couple of minutes, why was the program stopped, and what were the key findings from the program, and will you be implementing any of those changes into the program moving forward?

Sorry, you are still muted. There you go, General.

General CLARK. Can you hear me, sir?

Mr. RYAN. I can hear you now, yep.

General CLARK. Apologies. A little tech difficulty.

Mr. RYAN. That is all right.

General CLARK. We need that IT funding. That is what is going on there, sir.

But I will just say, sir, that your point is spot-on. Healthy nutrition is key for peak performance here. At all of our academies, the rigor of our programs demands that our cadets are healthy, that their nutrition is solid.

And we have just hired a new dietician for Mitchell Hall, we also hired an executive chef, with a focus on providing nutritious and delicious meals to our cadets so that they do have the desire to go into Mitchell Hall, into the dining facility, to take part in that. And we are getting some good results so far.

As far as the dining card project that we did, we started that, and we, unfortunately, did have to cut it short due to COVID. And COVID didn't allow our cadets to go to some of the other options that they had for dining.

So we cut it short. We do want to reinvigorate that program, though, in fiscal year 2022 so that we can provide those other options for our cadets to take part in. But regardless of how we do this, we want to ensure that it is always, always about their nutrition and that it is healthy options.

So we will monitor it. We will probably start off small when we begin in fiscal year 2022 with on-base opportunities, and then look to perhaps expand. But we are going to start with our on-base options and provide them with healthy opportunities.

Over, sir.

Mr. RYAN. Well, I appreciate that.

And, Madam Chair, as we have talked, you know, I want to do what we can from this committee really across the academies and across the military. We invest so much money into our men and women, yet we seem to lack the kind of initiatives around diet and nutrition. And we see it; the end result is around the diabetes and obesity issues that we have with Active Duty.

And I believe that we have an opportunity with the academies really to set these young people up to really function at a very, very high level. You know, I watched with great interest the pre-stories of the Super Bowl, with Tom Brady and his diet and how he functions at such a peak level. We are putting a lot of money into these academies, a lot of money into these kids. We should try to get at least some level of that to our academies and our military.

So, with that, I yield back the balance of my time, Madam Chair. Thank you.

Ms. MCCOLLUM. Thank you. And our last question—and it is 12:30 eastern standard time—had to do with lunch and food. So perfect timing.

Gentlemen, I want to thank you for your accessibility to the committee. I think you know that we are here to make sure that our young men and women who go to our military academies graduate with a great education, a great sense of responsibility, a great sense of our appreciation for them. And part of the way that we do that is by the faculty that we give them and the facilities that they are attending. Because you are competing, we are competing, America is competing with all the other colleges and universities that are out there for these, the brightest and the most talented that our country has.

So I want to thank you so much for everything. And we will follow up, especially on the maintenance and some of the facility issues. I look forward to COVID ending so that some of us can come out and visit your facilities and get to spend time with the midshipmen as well as the cadets and those who are serving at the Air Force Academy.

So that concludes today's hearing. And, with that, the subcommittee stands adjourned. Thank you again.

WEDNESDAY, MARCH 17, 2021.

**CLIMATE CHANGE, NATIONAL SECURITY, AND THE
ARCTIC**

WITNESSES

SHERRI GOODMAN, SENIOR FELLOW, WILSON CENTER

**VICE ADMIRAL DENNIS V. MCGINN (RET.), ADVISORY BOARD MEMBER,
CENTER FOR CLIMATE AND SECURITY**

Ms. MCCOLLUM. This meeting will come to order.

This hearing is fully virtual. So I am going to address a few things that Kyle did not talk about with housekeeping matters.

For today's meeting, the chair or staff designated by the chair may mute participants' microphones when they are not under recognition for the purpose of eliminating background noise.

Members are responsible for muting and unmuting themselves. If you notice or I notice that you haven't unmuted yourself, I will ask you if you would like staff to unmute you. If you would like, indicate by nodding your head, and staff will unmute your microphone.

I remind all the members and witnesses that the 5-minute clock still applies, and you can see the clock up in the screen there.

If there is a technology issue, we will move to the next member until the issue is resolved, and you will retain the balance of your time.

You will notice, as I said, a clock on your screen. That will show how much time is remaining. At one minute remaining, the clock will turn yellow. At 30 seconds remaining, I will gently tap the gavel, my mouse, to remind members that their time is almost expired.

When your time has expired, the clock will turn red, and I will begin to recognize the other member. I will just start recognizing the other member once it turns red.

In terms of speaking order, we will follow the order set forth in the House rules, beginning with the chair and ranking member; and then members who are present at the time that the hearing was called to order, they will be recognized in order of seniority; and, finally, members not present at the time of the hearing is called to order.

And I am going off script for a minute. We are going to try to put the order on deck for speaking on the chat, so look at your chat screen. And hopefully we will get some feedback, and maybe if that works for members, then they will know when they are up.

Finally, House rules require me to remind you that we have set up an email address to which members can send anything they wish to submit in writing at any of our hearings or markups. That email address has been provided to your staff.

So that takes care of the housekeeping.

OPENING STATEMENT OF CHAIR MCCOLLUM

Last month, the subcommittee held a hearing on budget trends and potential trajectories of defense spending in the next 10 to 20 years. As I mentioned, I want the subcommittee to use our time before we see the fiscal year 2022 budget request to think about larger themes, what priorities we want to direct funds towards in the upcoming budget cycle to address future challenges. This is another hearing in that series.

This morning, the subcommittee will receive testimony from two of the foremost experts on the subject of climate change and national security. Sherri Goodman is a senior fellow with the Polar Institute and Environmental Change and Security Program at The Wilson Center, and retired Vice Admiral Dennis McGinn is an advisory board member at the Center for Climate and Security. We look forward to both of their testimonies.

There can be no doubt—no doubt—that our climate is changing. The Department of Defense and the entire Federal Government must be prepared or suffer the consequences.

In the last few years, we have seen historic hurricanes, catastrophic damage to Tyndall Air Force Base in Florida, Camp LeJeune in North Carolina. Those hurricanes seriously impacted the Air Force and Marine Corps' operations and cost taxpayers millions of dollars.

In 2019, the historic Mississippi floodwaters overflowed onto Offutt Air Force Base in Nebraska, posing a threat to U.S. Strategic Command operations. These are not isolated climate incidences. Climate change is a national security threat to our Nation now, and the threat is growing.

The largest Federal consumer of energy—the largest—is the Department of Defense. It has a responsibility, then, to play a leading role in making its systems more efficient and to curb emissions in order to reduce these catastrophic events. And that is why I am pleased, in his first week of office, President Biden signed an executive order which requires the following: the Director of National Intelligence to issue a report on the national and economic security impacts of climate change; the Secretary of Defense to develop a climate risk analysis that could incorporate into modelling, simulation, wargaming, and other analysis; and, finally, the Secretary of Defense and the Chairman of the Joint Chiefs of Staff to consider security implications of climate change in developing the National Defense Strategy, defense planning guidance, the Chairman's risk assessment, and other relevant strategy planning and programming documents.

These actions are long overdue, and I thank President Biden for leading on this critical issue.

The change in climate will impact every corner of the Earth, but nowhere is it more pronounced than in the Arctic. As a former social studies teacher, I can say many Americans don't realize that the United States is an Arctic nation, and I have a map here, and you can look at it, and I handed out a map before. This is my moment to be a social studies teacher. You need to look at your map

and look at Alaska, and look at how we are part of the Arctic Council, folks.

We must ensure that the Arctic region plays an appropriate role in our national security planning. Our adversaries, they are active in the region, and we must be ready to respond from issues relating to thawing permafrost affecting installations or our ability to train and use equipment that can survive in extreme environments. We must ensure the freedom—the freedom of navigation through the Bering Strait, and these are just some of the important topics to discuss.

With that, I want to thank everyone for participating at today's hearing, and I would like to recognize our distinguished ranking member, Mr. Calvert, for his comments.

OPENING REMARKS OF MR. CALVERT

Mr. CALVERT. Well, thank you.

Thank you, Chair McCollum. I appreciate that.

And happy Saint Patrick's Day. And I apologize for some of our Republican colleagues who won't be on the conference this morning because we have our Republican Conference meeting this morning. Some of them won't make it or be on late.

But let me extend a warm with welcome to our distinguished witnesses. As the United States continues to focus on our National Security Strategy on great power competition, specifically threats arising from a more assertive China and Russia, it is important that we be attentive to other nontraditional challenges.

Over the years, Department of Defense has periodically assessed the effects of a changing climate on DOD missions, operational plans, and installations. A report to Congress in 2019, for example, noted a range of severe related events impacting our military installations; discussed how a change in climate can create insecurity, increasing demands for humanitarian assistance; and how it can create unanticipated vulnerabilities through mission execution.

Perhaps the most notable impact of changing climate to our strategic environment has been in the Arctic, as the chair mentioned. According to a new report by the Atlantic Council, a geopolitical friction over resources, territory, and transportation channels suggest the Arctic is likely to be one of the 21st century's most contested areas.

With that in mind, I welcome Secretary Austin's announcement that the Department will take appropriate actions to incorporate climate change considerations in DOD's activities and risk assessments to mitigate this driver of insecurity. I look forward to hearing from our experts on these issues and begin our assessment of the Department of Defense budget for the fiscal year 2022.

Again, thank you to our witnesses for appearing before us.

And, with that, chair, I yield back.

Ms. MCCOLLUM. Thank you so much, Mr. Calvert.

To the witnesses, your full written testimony will be placed in the record, and members have copies at their desks.

In the interest of time, I would strongly encourage each of you to keep your summarized statement to 5 minutes because we are going to have to leave time for questions. And I want you to be

complete, as succinct as you can also, in responding to our questions so we can get more in.

Ms. Goodman, we will start with you. Welcome, and thank you for being here.

SUMMARY STATEMENT OF MS. GOODMAN

Ms. GOODMAN. Chair McCollum, Ranking Member Calvert, and distinguished members of the subcommittee, thank you for the opportunity to testify today.

I have over 30 years of experience as a national security professional. I served as the first Deputy Under Secretary of Defense for Environmental Security in the 1990s and for 14 years at the Center for Naval Analysis, now at The Wilson Center, and the Center for Climate and Security. The views I am presenting today are my own.

As my Navy colleagues like to say, give me the BLUF, the bottom line upfront. Okay. Here is mine.

First, climate change presents a direct threat to U.S. national security that must be integrated into defense strategy, planning, and programs at all levels.

Second, the U.S. must prioritize climate change in its security engagements with allies and partners.

And, third, the Department of Defense can lead by example on clean energy, resilience, and climate predictive capabilities in a way that both serves and supports our military mission and enhances American leadership at home and abroad.

I will focus my opening remarks on the first point. My colleague, Vice Admiral McGinn, will address points two and three.

Okay. A bipartisan Congress has already spoken to the unprecedented threat of climate change to national security. In the fiscal year 2018 NDAA, Congress stated that climate change is a direct threat to the national security of the United States and is impacting stability in areas of the world both where the U.S. Armed Forces are operating today and where strategic implications for a future conflict exists.

As far back as the 2008 NDAA, Congress directed that the national security implications of climate change be included in the National Defense Strategy, the National Military Strategy, and the Quadrennial Defense Review.

The CNA Military Advisory Board, which I founded in 2007, comprised of senior U.S. retired generals and admirals, including Vice Admiral McGinn, identified climate change as a threat multiplier, recognizing that climate change can exacerbate political instability where food, water, and resource shortages already exist, often in the world's most dangerous and fragile regions.

But it is also here at home. Impacts from extreme weather and sea-level rise also pose threats to military installations and strain our military readiness in the U.S. and around the world. As you mentioned, Madam Chair, the losses at Camp LeJeune and Tyndall Air Force Base from Hurricanes Florence and Michael in 2018 are estimated by DOD to be approximately \$3 billion to \$5 billion each for each base, so we are already paying for this.

And, as the ranking member noted, in 2019, a DOD report identified 79 military installations facing climate-related risks, includ-

ing flooding, drought, and wildfire. The National Guard now responds to humanitarian-type assistance, both at home and health-related and around the world, and is straining our military resources and readiness.

These factors have implications for our ability to project power and influence around the world and can constrain our capacity to effectively advance our interests abroad.

For example, China is exerting greater control over resources and supply chains, from PPE to energy, both domestically and to gain power and an influence over parts of the world, including the Arctic, Latin America, and Africa.

In some cases, the U.S. will need to compete for influence where China is taking advantage of climate change to improve its military posture in the South China Sea or become the relief provider of first resort to vulnerable Pacific Island nations.

In the Arctic, China and Russia are exerting greater influence in an open Arctic due to climate change, which is emboldening their actions. China has declared itself to be a near Arctic state with ambitions to build a Polar Silk Road across the region. Russia envisions a toll road for shipping and transit across its northern sea route and seeks to enforce this maritime route as an internal waterway. As we see an increase from commercial activity, the U.S. must increase its preparedness and its search-and-rescue capability.

In sub-Saharan Africa, while not the sole factor, climate change has contributed to political instability there as well. Already, changes in precipitation patterns and droughts are exacerbating existing tensions among farmers and herders in the Sahel.

In the past year, climate-change-related flooding contributed to instability in East Africa, a region already strained by the pandemic, rising food insecurity, and a locust plague. As the head of the World Food Program described the events of 2020 in the region, it is shock upon shock upon shock.

The DOD can lead by example, and Vice Admiral McGinn will address those specific ways in which using resilience, technology, predictive capability, and clean energy can help address these challenges.

In closing, Congress has strengthened and should continue to strengthen authorities, programs, and funding available to the Department to address these threats. Climate proofing our security is essential to protect America's 21st century near- and long-term national security interests.

Thank you, Madam Chair and Ranking Member Calvert. I look forward to your questions.

[The information follows:]

Testimony of Sherri Goodman

Former Deputy Undersecretary of Defense for Environmental Security
Secretary General, International Military Council on Climate & Security
Senior Strategist, The Center for Climate & Security
Senior Fellow, Woodrow Wilson International Center
Founder, CNA Military Advisory Board

Before the United States House of Representatives
Committee on Appropriations
Subcommittee on Defense
Hearing: "Climate Change, National Security and the Arctic"
March 17, 2021

Chairwoman McCollum, Ranking Member Calvert, and distinguished Members of the Subcommittee, thank you for the opportunity to testify before you today.

I have over 30 years of experience as a national security professional. I served as the first Deputy Undersecretary of Defense (Environmental Security). I currently serve as the Secretary General of the International Military Council on Climate & Security, Founding Board Chair of the Council on Strategic Risks (CSR) and as Senior Strategist at the Center for Climate and Security, an institute of the CSR. I also am the Founder and former Executive Director of CNA's Military Advisory Board, and Senior Fellow at the Woodrow Wilson International Center's Polar Institute and Environmental Change & Security Program. The views I am presenting today are my own.

I would like to thank the Subcommittee for holding this important hearing today.

The U.S. House of Representatives, on a bipartisan basis, has consistently included important provisions in the National Defense Authorization Acts (NDAA) on climate change, including a recognition that "climate change poses a direct threat to the national security of the United States." President Biden's Executive Order on Tackling the Climate Crisis at Home and Abroad reflects this assessment, and Secretary of Defense Austin has indicated his agreement as well, stating, "We know first-hand the risk that climate change poses to national security because it affects the work we do every day." Secretary Austin's concerns are shared by many of his predecessors, including former Secretary of Defense Jim Mattis who

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noted in 2017 that, "Climate change can be a driver of instability and the Department of Defense must pay attention to potential adverse impacts generated by this phenomenon."

Let me start with a short history of how I came to determine that climate change is a security threat, and why it is in America's interest to understand the magnitude of this issue and the urgent need to address it.

I am the first born child of Holocaust refugees who arrived in the US in the late 1930s, among the fortunate few Jews who were able to escape Nazi Germany. Most were not so lucky, and that awareness became part of the ethos that pushed me to focus on combating the greatest security challenges of our time. Following World War II, America's next great security challenge was the Cold War. During that era, the most important national security threat we faced was of nuclear annihilation, a "bolt out of the blue" nuclear attack by the Soviet Union. We characterized such an attack as a "low probability, high consequence event." Fortunately, we succeeded and celebrated the end of the Cold War more than 25 years ago, when the Berlin Wall fell. At around the same time that the threat of nuclear war seemed to be diminishing, President George H.W. Bush was the first American President to acknowledge the serious implications of a changing climate for the United States.

When I served as the Deputy Undersecretary of Defense for Environmental Security in the 1990s, we were primarily focused on cleaning up hazardous waste from Cold War-era military activities. Over time, environmental issues evolved and became part of our National Security Strategy, when we began to consider the fact that conflicts over access to, or control of, natural resources compromised U.S. national security interests. The focus then was on regional cooperation between countries to reduce nuclear risks, including from nuclear waste, prevent transnational environmental crime such as overfishing and illegal logging, to promote cooperation among various stakeholders both within and outside of government, and to better understand and address the consequences of environmental threats. The U.S. Department of Defense (DoD) began integrating environmental concepts into planning under its Preventive Defense Strategy, and it took on the role of "...[helping] deter or mitigate the impacts of adverse environmental actions leading to international instability."¹ The DoD went from being a laggard to a leader on environmental and energy security matters.

¹ Sherri Wasserman Goodman, Deputy Under Secretary of Defense, (Environmental Security), Statement Before the Subcommittee on Installation and Facilities, House Armed Services Committee, May 13, 1993.

These developments at DoD, along with the implications of climate change coming into sharper focus, led to a marked increase in concerns about the security risks of climate change, from both the Department of Defense and the Intelligence Community,² during the George W. Bush Administration. While at CNA during that time, I founded the CNA Military Advisory Board (MAB), comprised of senior retired generals and admirals, to assess the national security implications of climate change. In 2007, we identified climate change as a “threat multiplier.” In a seminal report on this topic, the CNA MAB stated, “[t]he potential consequences of climate change are so significant that the prudent course of action is to begin now to assess how these changes may potentially affect our national security, and what courses of action our nation should take.”³ We recommended that the national security implications of climate change be incorporated into the broad range of national security strategy and planning documents. In the FY2008 NDAA, Congress directed that DOD include the national security implications of climate change in the National Security Strategy, National Defense Strategy and Quadrennial Defense Review (QDR).

Building on the work of the CNA MAB, the Center for Climate and Security (CCS), where I am now a Senior Strategist, assembled an Advisory Board of 30 senior retired military leaders and national security professionals, who have served across both Democratic and Republican Administrations, and in all branches of the U.S. military and the U.S. Coast Guard. Since 2011, CCS has been at the forefront of conducting research on the national security risks of climate change, with a steady stream of reports and articles, and was the first organization to highlight the climate change dimension in Syria’s political instability.⁴ CCS also hosts a climate and security “community of practice,” the Climate and Security Advisory Group, that includes participation from over 300 national security, military and intelligence leaders. In 2019, this Climate and Security Advisory Group released a Climate Security Plan for America, which laid out a roadmap for the federal government to tackle the security risks posed by climate change and, in 2020, the Group assembled a National Security, Military and Intelligence Panel (NSMIP) to produce the first of its kind Security Threat Assessment of Global Climate Change. Additionally, with our partners in Europe, CCS has established an International Military Council on Climate and Security, including representatives from 38

² The Center for Climate and Security Resource Hub, accessed at: <https://climateandsecurity.org/resources/u-s-government>

³ CNA Military Advisory Board. “National Security and the Threat of Climate Change.” Report. 2007.

⁴ Military Expert Panel Report: Sea Level Rise and the U.S. Military’s Mission.” Eds 1 & 2. The Center for Climate and Security. September 2016 & February 2018

countries, to meet the growing concerns about climate change from our allied and partner nations' militaries.

These entities and developments underscore that my assessment of the security implications of climate change is not a partisan one. It's about security. It comes from the careful analysis of our nation's leading national security, defense and intelligence thinkers and practitioners, both inside and outside of government. These analysts have been taking the climate crisis seriously since 1989, across two Democratic and three Republican Administrations.

With that background, let me tell you what I plan to cover today. An overarching theme throughout my remarks will be the fact that the Department of Defense is poised to "lead by example" in a way that both serves and protects the military mission and enables American leadership. First, I will discuss the unprecedented threats posed by climate change and how they must be integrated into defense strategy and planning at the highest levels. Second, I will address how the US military can make climate a priority in its global military engagements. Finally, I will talk about how the Department of Defense can lead by example in both clean energy and resilient infrastructure – in large part by leveraging its buying power across a range of procurements and investments that support the mission.

1. Climate change presents an unprecedented threat to U.S. national security

Since we first characterized climate change as a "threat multiplier" in 2007, the national security community has concluded that climate change now contributes to unprecedented security threats for the United States – and the world. Growing evidence demonstrates that climate change is increasing the likelihood of conflict in key regions.⁵ In 2016, the Climate Security Consensus Project stated that "the effects of climate change present a strategically-significant risk to U.S. national security." The FY2018 NDAA included the sense of Congress that "climate change presents a direct threat to national security." Also in 2018, research supported by USAID, further demonstrated the effects of climate change on state fragility around the world. The Director of National Intelligence has repeatedly emphasized that the United States will have to manage the negative effects of a changing climate in the Worldwide Threat Assessment, and publicly released papers from the National Intelligence Council on topics such as water security,

⁵ Schleussner, Carl-Friedrich, Jonathan F. Donges, Reik V. Donner, and Hans Joachim Schellnhuber. "Armed-conflict Risks Enhanced by Climate-related Disasters in Ethnically Fractionalized Countries." PNAS. August 16, 2016.

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food security, and overall climate change developments have noted the national security implications.

The Biden Administration has not only recognized these threats, but has both elevated and operationalized that recognition by putting climate security front and center in its foreign and security policy, calling for the integration of climate considerations across the work of all agencies that engage in extensive work abroad. Secretary of Defense Austin has indicated his support for this focus, and just last week launched a new senior-level Climate Working Group to coordinate the Department's response to the climate change Executive Order and track the Pentagon's progress. Further, Secretary Austin noted in his March 2021 message to the force, "We face a growing climate crisis that is impacting our missions, plans, and capabilities and must be met by ambitious, immediate action. In line with the President's direction, we will elevate climate as a national security priority, integrating climate considerations into the Department's policies, strategies, and partner engagements."

This integrative approach is critical as these unprecedented changes in the climate arrive during a time of other rapid and unprecedented changes in the geostrategic environment. China's rise as strategic competitor, combined with population growth, rising powers, an increase in the political fortunes of authoritarians, weakening norms against the use of weapons of mass destruction, rapid and disruptive technological change, among other major risks, are combining to challenge us in dizzying ways. The impacts of rapid climate change arrive in this already unstable and volatile world, threatening to further destabilize the international order. While there are many ways in which climate change threatens U.S. security, today I'm going to focus primarily on how it exacerbates geopolitical tensions and contributes to political instability.

Exacerbating Geopolitical Tensions and Political Instability

Climate change is affecting the very geostrategic landscape in which we operate, which, in turn, is heightening tensions around the world, opening new areas of competition, and emboldening others to exert their influence, whether that is China, Russia, or other hostile political forces and terrorist networks. Three regions in which these geopolitical challenges are particularly acute and generating new defense missions are the Indo-Pacific, the Arctic, and Sub-Saharan Africa.

The Indo-Pacific: The China Dynamic

The Indo-Asia Pacific region is highly exposed to climate change-driven hazards, including extreme weather events and sea level rise. The disruption of the annual monsoon cycle across the Indian subcontinent could put millions of people at risk, beyond those already experiencing such threats, of increased flooding and food insecurity. These unprecedented hazards arrive in a region that already faces a broad spectrum of conventional, unconventional and hybrid security risks and challenges. Upon the release of two new reports from the Center for Climate and Security earlier this year, focused on South Asia and Southeast Asia, former U.S. Pacific Commander Admiral Samuel J. Locklear III, U.S. Navy (Ret) stated:“ We have entered an age in which multiple, converging risks define our security environment. In the Indo-Pacific region, climate change is the biggest long-term security threat. I testified to this effect to the U.S. House of Representatives in 2013, and it’s even more true now. Climate impacts are getting more potent, dialing up the threats from existing conflict patterns and resource scarcities. At the same time, climate projections are getting more precise. This combination of potency and precision translates into an obligation for militaries to anticipate, train, equip and prepare for increasingly dangerous climate security scenarios. ”

Across the region, climate impacts are inducing or exacerbating physical and socio-economic stressors, leading to resource competition, health impacts, societal tensions and irregular migration and displacement — which in turn can amplify existing security challenges or create new ones. Climate-related migration can stress densely-packed urban areas and increase intercommunal conflict and grievances with governments. It can also compromise scarce or shared water (and other) resources , amplifying tensions between states or domestic provinces and ethnic groups.

Such scenarios are already playing out in the Philippines, in the South China Sea, and in the context of the India-Pakistan and China-India security rivalries, among other locations. In particular, disputes over transboundary rivers subject to climate-induced floods and droughts are worsening the already-intense adversarial relationships between nuclear weapons-possessing states.

For militaries in the region, climate change both impedes operational preparedness and expands military missions. Military installations, like cities, are vulnerable to extreme weather which damages buildings, infrastructure and assets. Yet militaries must contend with such impacts even as they are called upon to perform additional humanitarian assistance and disaster response missions. ASEAN has taken up coordinated disaster management and emergency response in its new Disaster Management Framework 2021-2025, and South Asia has the institutional

framework to do the same in the broader regional organization, the South Asian Association of Regional Cooperation.

The geopolitical dynamics of climate security in the region are driven in large part by China. For example, China's control over the origins of Asia's major river systems contributes to tensions with other countries in the region. With 22 percent of the world's population but only 7 percent of its fresh water, China's efforts to secure freshwater resources, including building dams, are in some cases contributing stress to its regional relationships. Upstream dam-building and other control measures taken or planned for the Tibetan Plateau are contributing to regional hostilities among the 60 million people in China, Myanmar, Laos, Cambodia and Vietnam, that rely directly on the Mekong River Basin for livelihoods and food security.⁶ At the same time, U.S. allies and partners in the Asia-Pacific remain concerned about the U.S. commitment and investment in the region, and may ultimately find it more practical to accept the reality of a regionally-dominant China, and the economic and political consequences of that reality. Indeed, many nations in the region, in the face of an uncertain level of U.S. engagement, seem to be hedging their bets as they attempt to both accommodate an increasingly powerful Beijing, while also maintaining positive relationships with the United States.⁷ While a number of nations in the Asia-Pacific are engaged in disputes with China over contested areas of the South China Sea, China is expanding its influence not just within the region, but beyond, to Latin America, Africa, the Arctic (as I will elaborate on in a moment), and elsewhere. China remains the largest trading partner for Southeast Asian nations and is increasing its military force significantly in relation to other countries in its neighborhood, including through the deployment of a "blue-water navy" that has ventured as far from home as the Straits of Hormuz.⁸

In this context, the United States will need to develop more expansive approaches to maintaining and enhancing its regional influence, and supporting the interests of its allies, partners and prospective partners in the Asia-Pacific, including through

⁶ Climate and Security in the Indo-Asia Pacific 2020." Product of the Expert Group of the International Military Council on Climate and Security. Authors: Shiloh Fetzek (CCS), Bastien Alex (IRIS), Laura Birkman (HCSS), Steve Brock (CCS), Brigitte Dekker (Clingendael), Francesco Femia (CCS), Sherri Goodman (CCS), Tom Middendorp (Clingendael), Michel Rademaker (HCSS), Louise van Schaik (Clingendael), Julia Tasse (IRIS), Caitlin Werrell (CCS). Edited by Francesco Femia & Caitlin Werrell. Published by the Center for Climate and Security, an institute of the Council on Strategic Risks. July 2020.

⁷ Femia, Francesco, and Caitlin E. Werrell. "A Climate-Security Plan for the Asia-Pacific Rebalance: Lessons from the Marshall Plan" A Climate and Security Correlation Series, The Center for Climate and Security, November 2015.

⁸ John Kemp, "In search for security, China's navy enters Strait of Hormuz," Reuters, September 22, 2014, available at <http://www.reuters.com/article/2014/09/22/china-navy-iran-kempidUSL6NORN2FK20140922>

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robustly supporting climate resilience efforts in the region. As I wrote with a colleague in *The National Interest* earlier this year, “In some cases, the United States will need to compete for influence where China is taking advantage of climate change to improve its military posture in the South China Sea or become the relief provider of first resort to vulnerable Pacific Island nations.”

The Arctic: Developing a Low Tension, High Effort Agenda

The Arctic has emerged as a region of potential geostrategic competition, primarily because rising temperatures, melting sea ice, and collapsing permafrost now grant access to this region previously locked in ice most of year. While the Arctic has historically been a region characterized by cooperation and diplomacy, it has more recently become a zone of increased tensions over valuable energy and mineral resources, and access to shipping routes. The rapid melting of the multi-year sea ice has given rise to significant growth in economic and military activities, including shipping, resource extraction, and other commerce. This rapid change in the Arctic is feeding into China’s and Russia’s strategic ambitions, both regionally and globally.

Defense Secretary Austin recognizes these challenges. In response to questions about the Arctic from the Senate Armed Services Committee ahead of his confirmation hearing earlier this year, he said, “Climate change is drastically altering the natural environment of the Arctic--and the strategic balance. This is fast becoming a region of geopolitical competition, and I have serious concerns about the Russian military buildup and aggressive behavior in the Arctic--and around the world. Likewise, I am deeply concerned about Chinese intentions in the region.”

A recent report by the Center for Climate Security and the Norwegian Institute of International Affairs that I co-authored made the following high-level observations about Arctic climate security risks: the report found that as the Arctic becomes increasingly navigable, the uptick in commercial, civilian, and military activity creates more opportunities for conflicts, accidents, and misunderstandings. There is also an expanding likelihood of states like Russia and China using civilian and commercial actors for strategic positioning or risky gray zone operations. Russia envisions a toll road for shipping and transit across its Northern Sea Route, and seeks to enforce this maritime route as internal waterway—a claim which the U.S. and many other nations dispute. In 2018, China declared itself a “near Arctic state,” with ambitions to build a Polar Silk Road across the region. China is an active “Observer” in the Arctic Council, and is increasingly participating in a

variety of Arctic efforts, seeking to increase its presence and influence in the region through dual-use scientific exploration and providing foreign direct investment for infrastructure such as ports and airfields. The institutions that have helped depoliticize and produce stability in the Arctic for several decades may not be resilient enough to withstand new demands resulting from climate change, as climate change introduces significant uncertainties about established rules and norms and puts stress on existing institutions.⁹

Aggressive Russian state behavior both in the Arctic and elsewhere poses a particular challenge in this context. Prior to Russia's illegal annexation of Crimea in 2014, Moscow was engaged in the Arctic Security Forces Roundtable and the Arctic Chiefs of Defense — two forums for discussing cooperation among military forces both to deconflict or to support non-military activities such as search and rescue and oil spill response. Since 2014, Russia has not been included in these dialogues. Lack of coordination raises the risk of misunderstandings, miscommunications, accidents, or spillover tensions from another regional conflict. As I noted with some colleagues in a recent *Arctic Today* article, the priority in the Arctic must be to establish mechanisms for dialogue and communication so as to increase clarity of what is and is not acceptable behavior, to communicate grievances, and to manage risk. To help manage these challenges, the eight Arctic nations would benefit from a venue for regular dialogue among security forces, both to build confidence and to reduce risk from accidents that could lead to miscalculation or escalation.

Sub-Saharan Africa: Contributing to Instability and Risk of Extremism

Sub-Saharan Africa's geographic vulnerability to extreme climate outcomes and lower economic development and institutional strength will severely challenge the region's capacity to cope with climate change and its attendant consequences for instability and conflict.

Already, changes in precipitation patterns and droughts are exacerbating existing tensions among farmers and herders in the Sahel. At the same time, in the past year climate change-related flooding contributed to instability in East Africa, a region already strained by the pandemic, rising food insecurity and a locust plague. As

⁹! Climate Change and Security in the Arctic." A product of The Center for Climate and Security (CCS), an institute of the Council on Strategic Risks (CSR), and The Norwegian Institute of International Affairs (NUPI). Authors: Sherri Goodman, Kate Guy, Marisol Maddox (CCS); Vegard Valther Hansen, Ole Jacob Sending, Iselin Németh Winther (NUPI). Edited by Francesco Femia and Erin Sikorsky (CCS). January 2021.

the head of the World Food Program in East Africa described the events of 2020 in that region “it’s shock upon shock upon shock.”

Also of concern is the intersection of climate change and extremism on the continent. For example, the rise of Al Qaeda in the Islamic Maghreb (AQIM) in Mali, which sparked significant instability across the country and region, contains a climate change signature.¹⁰ More specifically, this situation was shaped in 2012-14 by an intersection of three salient trends: desertification and food insecurity, exacerbated by climate change; an ongoing rebellion by Tuareg nomadic herdsmen in northern Mali; and weak government institutions that could not address the marginalization of the Tuareg and their increasing clashes with sedentary agriculturalist tribes in the southern and central areas of the country.¹¹ Overwhelmed by these challenges, the fragile government was overthrown by a coup in March 2012. Following the coup, the Malian political system was unable to maintain influence in northern Mali; AQIM and other groups moved in and took control.¹²

While climate change alone did not cause the conflict, it certainly was a factor in harming the once-coexistent relationship between the Arab Tuareg and non-Arab Muslim ethnic groups in central and southern Mali. In fact, the recent Malian conflict fits a pattern of other such conflicts in Africa’s Sahel region, including Darfur, South Sudan, Niger, and Nigeria. Drought and desertification have impacted the region for hundreds of years; yet climate change now is worsening these conditions across sub-Saharan Africa, and has contributed to movement within and across borders, which can further lead to conflict dynamics in these countries that lack adequate governance and sufficiently-robust institutions to settle conflicts over vital resources. Add to this the involvement of transnational terrorist groups and militias, such as AQIM and the *Janjaweed* (in Mali and Darfur, respectively), and these conflicts become more complex, transforming resource competition into ethno-political conflict.

2. Prioritizing Climate Change in U.S. Security Engagements

¹⁰ Femia, Francesco and Caitlin E. Werrell, “Mali: Migration, Militias, Coups and Climate Change,” The Center for Climate and Security, April 2019; and The CNA Military Advisory Board, “National Security and the Accelerating Risks of Climate Change,” CNA Corporation, May 2014

¹¹ Alexis Arieff, *Crisis in Mali* (Washington, DC: Congressional Research Service, January 14, 2013), <http://www.fas.org/sgp/crs/row/R42664.pdf>

¹² Ibid

In addition to integrating climate into our assessments of security threats and our strategies for addressing those threats, the United States can further “climate proof” security by bringing climate considerations into our security assistance programs with other countries. Addressing the geopolitical dynamics of climate change risks requires the United States to step up and play a leadership role in helping allies and partners build resilience to the effects of climate change on their, and consequently on our collective, security. As the Department of Defense carries out the global posture review, with the goal of aligning force posture with security strategy, DoD should consider how it can better enhance the resilience of allies and partners and build within them the capacity to endure the stresses imposed by climate change. As I mentioned earlier, China is already trying to expand its influence by doing just that – embracing the climate and energy goals of U.S. allies and partners, providing direct and tangible assistance to climate-vulnerable nations, and securing influence and economic gains through energy investments.

The United States has many tools in its toolbox with which it can and should compete. As the Center for Climate and Security outlined in its Climate Security Plan for America, the Defense Department should develop a “Security Forces Climate Engagement Plan” to promote regular military-to-military and civil-military international engagement on climate change preparation, to enhance the resilience of U.S. allies and partners, and to enhance U.S. influence vis-à-vis its primary competitors. The Department of Defense should revitalize the Defense Environmental International Cooperation Program (DEIC) with sufficient resources to make military-to-military environmental cooperation a robust engagement tool for each regional combatant command.

Additionally, Combatant Commanders should engage allied and partner nations’ militaries on adapting to climate change and working to mitigate impacts to military operations, energy resilience, infrastructure and readiness through a variety of pathways, ranging from formal intergovernmental NATO Summits to Track II-focused fora such as the Munich Security Conference, Halifax International Security Forum, the Pacific Environmental Security Forum, and the International Military Council on Climate and Security.

3. Leading by Example in Resilient Investment and Infrastructure

The Defense Department is the nation’s single largest energy user, at approximately 1 percent of U.S. energy. It has already made important investments in clean energy, from solar-powered housing to microgrids and renewables for remotely-deployed forces and at facilities here in the U.S. – saving

energy, water, money, and advancing these technologies for both military and commercial applications. As it implements the requirements in the President's Executive Order on Tackling the Climate Crisis at Home and Abroad, such as the federal clean electricity and vehicle procurement strategy, DOD will deepen these investments.

Resilient Energy and Technology Investments

DOD can lead by example in key energy and climate technologies that align with the military mission. Here are a few examples:

1. Electric vehicles – DoD leases 166,000 vehicles from the General Services Administration according to the FY20 Strategic Stability Performance Plan. The department can help reduce its own carbon footprint, reduce reliance on fossil fuels, and help advance the transition to net zero through the use of electric vehicles and rapid deployment of charging stations on DoD installations.
2. Microgrids and resilient transmission infrastructure – DOD needs to be able to operate critical military installations, even if subject to a cyber-attack, ice storm, hurricane, flood, or deliberate terrorist attack. That is why military bases practice “Black Start” exercises, to recover from a power outage, and maintain operations for extended periods even if the grid is down. The technologies and practices needed to ride out these threats, including microgrids, distributed energy systems, and advanced energy storage methods will have the added benefit of promoting resilient infrastructure in our communities. More transmission infrastructure is needed to create redundancies – this does not mean duplicating the paths of existing lines. It means being able to provide power from another area or region to the facility (and surrounding community, in many instances) in need.
3. Climate predictive capabilities – From military operations planning to resilient base infrastructure, a new generation of earth system observation and prediction capabilities, that provides asset-level climate data analytics for shorter-term (hours to weeks to months) planning, is becoming increasingly available, both in government labs and in the private sector. Technological developments, including quantum computing, 5G, artificial intelligence, data analytics, and more, are further increasing our capacity to forecast, predict, and plan for climate security risks, from extreme weather events and their impacts, to food scarcity, water shortages and beyond. These improved predictive capabilities are also being used by city planners, insurers, and across a range of critical infrastructure sectors to reduce

climate risk. As DOD adapts these technologies for the military mission, it will further reduce risk to both operations and infrastructure.

One example of such a predictive capability is the Navy's Earth System Prediction Capability (ESPC) model, which has significant potential for regional climate projections. ESPC uses an Earth System Model that includes interactions between multiple component models (atmosphere, ocean, waves, land, and sea ice), and is typically run at much higher spatial resolutions than current climate models. The Office of Naval Research (ONR) developed ESPC for naval operations and is focused on providing both tactical decision and strategic planning support. ESPC could be used for high-resolution forecasts of the operational environment in future decades, enabling regional estimates of sea level rise, understanding of changes in the frequency and severity of extreme weather events around the globe, and refining projections of the opening of new sea routes in the Arctic due to diminishing sea ice. At present, such climate applications are beyond the scope of the ONR S&T applied research portfolio that emphasizes short-term prediction and predictability of weather and ocean behavior for Naval operations; however, these climate applications could be invaluable for Combatant Command theater engagement planning on a regional basis, and for working with partner and allies.

As I noted in my *National Interest* article, while the department already has a significant number of clean energy research and development efforts, bringing together these efforts into a Climate and Clean Energy Innovation Office with additional investment would enable the Pentagon to more rapidly develop, test and deploy a wide range of technologies. The article stated, "The department needs to lead not only on mission-driven clean energy research and development but also on the transition of these technologies to the fleet and the field. Too often, improved energy and climate technologies do not make it beyond what some call the "Valley of Death" in technology deployment because there is no acquisition requirement for it. This can and should change with a Clean Energy Transition Fund that incentives the military departments and acquisition commands to both try and buy lower carbon products."¹³

Resilient Infrastructure

¹³ Sherri Goodman and Kate Guy, "Climatizing Security: Protecting Americans in the Age of Climate Change," *The National Interest*, 15 January 2021, <https://nationalinterest.org/blog/buzz/climatizing-security-protecting-americans-age-climate-change-176454>.

The Department of Defense must also make its own infrastructure, including key supporting civilian infrastructure, more resilient to climate risks. It is already paying the price of billions of dollars of damage at Tyndall Air Force Base, Camp LeJeune, and Offutt Air Force Base from recent hurricanes and floods. At the same time, sea-level rise is making recurring flooding more common in coastal communities and at coastal bases, and wildfire season is no longer confined to one season, or one geography. Under current emissions pathways, these risks will only increase in the years to come.

Given this context, the CCS Climate Security Plan for America calls for the implementation of a Climate Security Infrastructure Initiative across DoD and the US government. Such an initiative would be aimed at investing in the resilience of both military installations and critical civilian infrastructure, including low-carbon footprint projects designed to significantly lower the scale and scope of climate change--bolstering national security and creating long lasting employment opportunities. In the face of increasing threats from sea level rise, extreme weather events and wildfires, it should involve a comprehensive program to repair, construct, fortify, and responsibly site the nation's interconnected military, energy, transportation, agriculture, water, and commerce infrastructure in a climate resilient fashion. This should include an emphasis on building resilience to projected climate scenarios--as we've seen again and again in the past few months, what have been considered "worst case" scenarios are increasingly likely. For example, recent studies on sea level rise and ice melt suggest we have underestimated the pace and effects of each.

I am pleased that DOD is already moving to improve base resilience through use of the Defense Climate Assessment Tool (DCAT) and understand that over 1000 military sites have already had at least their preliminary assessments. The next step is for DOD to invest in the resilience actions that follow from these assessments.

To that end, in the FY 2020 NDAA and FY 2021 NDAA, Congress has significantly enhanced the authorities DoD has to address climate-related threats to military installations and key supporting civilian infrastructure, including amendments to the Defense Access Roads (DAR) program¹⁴, the Readiness and Environmental Protection Integration Program (REPI)¹⁵, the military installation

¹⁴ DAR, 23 USC 210

¹⁵ 10 USC 2684a

resilience projects authority¹⁶, the Defense Community Infrastructure Pilot (DCIP)¹⁷, and other new or strengthened authorities. However, increased funding sufficient to allow DOD to take full advantage of these new or expanded authorities has not yet followed and remains more vital than ever. For every \$1 spent on mitigation or enhanced resilience now, \$6 dollars will be saved in recovery, according to recent research.

Finally, as we all know, “you can’t manage what you don’t measure.” In the 1990s, I led an effort to establish the first Environmental Security metrics for DOD, that included contaminated site cleanup, compliance with air, water and waste laws, and protection of endangered species and cultural resources. I understand that DOD is working on the next generation of climate and energy metrics that will enable the Secretary of Defense to measure the Department’s progress on such matters as Military Installation Resilience Plans, Black Start capability, electric vehicles, climate predictive capability, and other goals and objectives of the President’s Climate Executive Order. These metrics will be an important tool in enabling DOD leadership to hold the Department accountable and report to Congress and others on progress.

Conclusion

Fortunately, the difference between today and major global disruptions of the past is that we can spot impending disasters earlier and more easily. We do not have to wait for the next pandemic, the next 9/11 or the next Pearl Harbor, to better prepare for the climate crisis we already experience. Though the risks are unprecedented, our foresight is unprecedented as well. Technological developments have given us predictive tools that enhance our ability to anticipate and mitigate threats, to transform energy systems for improved mission performance, and to make bases more resilient and military communities more secure. Congress has strengthened, and must continue to strengthen, the authorities, programs, and funding available to DOD address these threats. In short, we have the ability to make our communities, institutions and individuals more resilient to a broad range of threats. “Climate-proofing” our security is essential to protect America’s 21st-century near- and long-term national security interests. Failing to address climate security risks now will both embolden our adversaries to take the lead and result in more costly disasters and loss of American lives.

¹⁶ 10 USC 2815

¹⁷ 10 USC 2391(d)

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 03/17/2021

Hearing Title : _____

Climate Change, National Security, and the Arctic

Witness Name: Sherri Goodman

Position/Title: Chair of the Board, Council on Strategic Risks

Witness Type: ☐ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☐ Self ☒ Organization

If you are representing an organization, please list what entity or entities you are representing:

Chair of the Board, The Council on Strategic Risks
Senior Fellow, Woodrow Wilson International Center

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

Yes. I am the Chair of the Board of the Council on Strategic Risks (CSR). I am also a Senior Strategist and Advisory Board member at the Center for Climate and Security (CCS), which is an institute within CSR.

Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

None applicable.

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

1. Canada Department of National Defence: \$35,533 grant to CSR to draft a "Climate Security Plan for Canada." 2. Norwegian Ministry of Defence: \$42,210 grant for research and analysis on security implications of climate change on the Arctic region. 3. From the Government of Luxembourg, €200,000 for developing the World Climate and Security Report 2021.

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

- ☒ I have attached a written statement of proposed testimony.
- ☒ I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include— (i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(ii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

Appropriations

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False Statements Certification

Knowingly providing material false information to this committee/subcommittee, or knowingly concealing material information from this committee/subcommittee, is a crime (18 U.S.C. § 1001). This form will be made part of the hearing record.



Witness signature



Date

Appropriations

03/17/2021 — Climate Change, National Security, and the Arctic

Ms. MCCOLLUM. Well, thank you. It sounds like we are going to have testimony that really is going to build and complement one another, so thank you both for coordinating that.

Vice Admiral McGinn, you are next.

SUMMARY STATEMENT OF ADMIRAL MCGINN

Admiral MCGINN. Chairwoman McCollum, Ranking Member Calvert, distinguished members of the subcommittee, first order of business, happy Saint Patrick's Day. What a wonderful and great day to have this important conversation.

I have over 35 years of experience in the uniform of the United States Navy. I served for almost 4 years as the Assistant Secretary of the Navy from 2013 to 2017 for Energy, Installations, and Environment. And, importantly, I have over 15 years' experience in the private sector working challenges and opportunities in energy and environmental issues, including climate change.

Secretary Goodman very succinctly framed it with the three bottom lines upfront and very effectively summarized that first critical point that climate change indeed presents a direct threat to U.S. national security. So I will pick up on the second two that the U.S. must prioritize climate change in global security engagements, and that the Department must lead by example.

As Secretary of Defense Austin has stated, quote, "There is little about what the Department does to defend the American people that is not affected by climate change." He referenced specifically our national security strategies, operations, and infrastructure.

When it comes to U.S. security engagements around the world, we have stated in our own Center for Climate and Security Plan for America that the Defense Department should develop a security forces climate engagement plan to promote regular military-to-military and civil-military international engagement in order to enhance the operational resilience of U.S. allies and partners and to enhance United States' influence vis-a-vis its primary competitors.

Importantly, combatant commanders around the globe should engage allied and partner nations' militaries in adapting to climate change and working to mitigate the adverse effects to military operations, energy resilience, infrastructure, and readiness through a variety of pathways, everything from formal intergovernmental negotiations under NATO, or regional—regionally focused military and civil security planning forums.

The third point of framing our bottom lines upfront, leading by example. As the Nation's largest user of energy, as you have pointed out, Chair McCollum, DOD can lead by example in key energy and climate technologies that align nicely with the military mission. Here are just a couple of examples.

Electric vehicles. The Department of Defense leases 166,000 vehicles from the General Services Administration every year according to the Fiscal Year 2020 Strategic Stability Performance Plan. The Department can help diversify its transportation energy sources, reduce operational costs and carbon footprint and also help to scale up and accelerate the transition to net-zero transportation through the use of electric vehicles of all types, nontactical, and rapid deployment of charging stations on DOD installations.

Micro grids and resilient transmission infrastructures. The Department of Defense needs to be able to carry out its critical military missions on key installations, despite the growing threats of cyber-attack; severe weather, such as ice storms, wildfires, hurricanes, floods; or even deliberate terrorist attack. That is why military bases practice, quote, “Black Start” exercises to recover from a power outage and maintain operations for extended periods, even if the grid is down.

The technologies and practices needed to ride out these threats, including micro grids, distributed energy systems, and advanced energy storage methods, will have the added benefit of promoting resilient infrastructure throughout our civilian communities.

Climate predictive capabilities. From military operations planning to resilient base infrastructure, a new generation of Earth system observations and predictive capabilities that provide asset-level climate data analytics for shorter term—hours to weeks to months—planning is becoming increasingly available both in government technical centers and in the private sector. As DOD adapts these technologies for the military mission, that will further reduce risk to both operations and to our military infrastructure.

In conclusion, our Nation’s energy, economic, and environmental security are the critical foundations upon which our overall national security and quality of life rest. The essential leadership role of the Department of Defense in facing the challenges of climate change can effectively turn those challenges into great opportunities for America and for our partners.

Thank you very much, and I look forward to your questions.
[The information follows:]

VADM Dennis McGinn, USN, Ret.
Member, Advisory Board, The Center for Climate & Security

Statement to the United States House of Representatives
Committee on Appropriations
Subcommittee on Defense

Climate Change and National Security
17 March 2021

Thank you, Chairwoman McCullom, Ranking Member Calvert, and distinguished Members of the Subcommittee, for the opportunity to testify today on the critical impact of climate change on national security. My views are based on over thirty-five years of service to our Nation in the United States Navy, as a former Assistant Secretary of the Navy for Energy, Installations and Environment, and as a senior executive intimately familiar with issues of energy and the environment.

So, based on my national security expertise, I can testify unequivocally that climate change is a national security issue, and it is in our national interest to address it.

A little more than a year ago, I joined dozens of fellow security experts – many of them retired flag officers like myself – in developing and issuing a report called the Climate Security Plan for America. This report includes dozens of recommendations that I would commend to your attention, and it is based on two fundamental principles. First, that in order to make a real difference in addressing the security risks posed by climate change, climate security must be an articulated priority of the President, communicated plainly to both the American people and to the Federal agencies tasked to respond to the threat. Second, climate impacts must be integrated into the considerations of security actors throughout the government, not simply as a separate category of action but as a risk that informs programs and priorities throughout the agencies.

In a related report, A Security Threat Assessment of Global Climate Change, the Center for Climate and Security's National Security, Military and Intelligence Panel concluded that we run the risk of catastrophic security consequences at home and abroad if we do not urgently and significantly reduce greenhouse gas emissions - reaching, at the very least, net-zero emissions by 2050 to avoid those consequences.

I could not have asked for a better response to these warnings and recommendations than the one President Biden has made, declaring in Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad) that climate change is an essential element of foreign policy and national security and setting the climate agenda for DoD and other Federal agencies. In his Interim National Security Strategic Guidance, President Biden states that we must be able to "meet challenges not only from great powers and regional adversaries, but also from violent and criminal non-state actors and extremists, and from threats like climate change, infectious disease, cyberattacks and disinformation that respect no national borders."

This attention to climate threats and other global challenges is not inconsistent with traditional priorities but is aligned and integrated with them. China's posture in Asia and around the world, for example, is informed by growing water scarcity and food insecurity in Asia, coupled with the need to feed the world's most populous nation. They make economic choices to invest in renewable energy and electric vehicles because they see the direction the world is going and the opportunity that presents. Similarly, Russia's posture in the Arctic is inextricably linked to the receding ice and increased access to the region. They see both opportunity and threat to their north.

In fact, Congress has repeatedly acknowledged the security impacts of climate change, such as when it declared climate change to be a direct threat to U.S. national security in 2017. The pragmatic, bipartisan approach Congress has taken on this issue in recent years has been extremely important.

On March 4, Secretary Austin highlighted climate change as a DoD priority in a memo to the Department, stating:

"We face a growing climate crisis that is impacting our missions, plans, and capabilities and must be met by ambitious, immediate action. In line with the President's direction, we will elevate climate as a national security priority, integrating climate considerations into the Department's policies, strategies, and partner engagements. We will incorporate climate risk assessments into our war-gaming, modeling, and simulation, and we will bolster mission resilience and deploy solutions that optimize capability and reduce our own carbon footprint. Where possible, we will seek to lead the way for alternative climate-considered approaches for the country."

This is a logical progression from statements Secretary Mattis made during the last Administration. Mattis stated that "the effects of a changing climate — such as increased maritime access to the Arctic, rising sea levels, desertification, among others — impact our security situation." He added, "Climate change can be a driver of instability and the Department of Defense must pay attention to potential adverse impacts generated by this phenomenon," adding that "...climate change is impacting stability in areas of the world where our troops are operating today."

The common thread is a recognition of the threat that both Secretaries understand: recognition that climate change will increasingly drive instability around the world; recognition that the opening Arctic will create new dimensions in great power competition; recognition that extreme weather will create both readiness challenges and humanitarian crises that DoD will have to manage. It is a recognition that we must prepare for this change, and that dealing with climate change aligns with the Department's mission. Just as tactical commanders would not consider engaging in an operation without weather reports and intelligence, our strategic approach must incorporate the effects of climate change, which are reshaping global dynamics in multiple ways.

Climate change is different from traditional military threats, because it is not like having a specific enemy, a rapid and well-defined response timeline, or a clearly located crisis region to which we are responding. Climate change has the potential to create more frequent, intense and widespread natural and humanitarian disasters due to typhoons, flooding, drought, disease, crop failure and the consequent migration of large populations. These climate-driven severe weather events will magnify existing tensions in critical regions, overwhelm fragile political, economic and social structures, causing them to fracture and fail. The predictable result: much greater frequency and intensity of regional conflict and direct threats to U.S. interests and national security.

For example, climate change didn't cause the Syrian civil war, but by making extreme drought more likely in a land whose reliance on agriculture made it vulnerable to drought, it increased the likelihood of significant internal displacement and certainly helped to amplify tensions.

In addition to the geopolitical stress it applies, climate change is having a direct impact on readiness and installations. I oversaw all Navy installations, and I can tell you that our base commanders know that we don't have the luxury of waiting to be inundated before shoring up our facilities. Our commanders are working to reduce the risk of current investments by incorporating resilience and placing new facilities away from risk. Our planning is changing, and it makes more sense to invest in risk reduction now than to wait and pay for repairs after the fact.

This is clear when we look at the increasing impact of extreme weather. In October 2018, for example, Tyndall AFB suffered more than \$5 billion in damages from Hurricane Michael, with 484 buildings destroyed or damaged beyond repair. In September 2018, Camp Lejeune suffered \$3.6 billion in damages, with more than 400 buildings demolished. The full recovery of both bases is still years away. Six months later, Offutt AFB in Nebraska, the home of U.S. Strategic Command, suffered more than \$1 billion in damages and severe mission impacts due to serious flooding incidents.

Severe storms and associated flooding are far from the only impacts the military has suffered. Wildfire risks, increased by extreme drought, have driven evacuations of military installations such as the Marine Corps Mountain Warfare Training Center (2018); Naval Air Station Point Mugu (2018); Vandenberg AFB (2016); and Camp Pendleton (2014), all in California. Heat-related illnesses and deaths during training have increased dramatically in the last decade.

A 2019 DOD study examined 79 mission critical military installations and found that two-thirds faced climate risks, with flood and drought being the most common. In subsequent assessments, each service identified sites vulnerable to climate risks: the Marine Corps identified 10 sites including Camp Pendleton and Camp Lejeune and the Navy 16 including Naval Base San Diego and Naval Air Station Key West, the Air Force's top 10 included six sites in Florida including Tyndall AFB and MacDill AFB; and

the Army's top 10 all identified desertification as the primary risk and were mostly sites in the southwestern United States such as Yuma Proving Ground in Arizona and Fort Bliss, Texas.

In the face of these threats, Congress has been an important partner in the effort to address the climate impacts on national security. In the past few years, Congress has, on a bipartisan basis, passed multiple measures in a series of National Defense Authorization Acts focused on improving installation resilience to climate change and on planning for future challenges – particularly in the Arctic. Just two months ago, the Fiscal Year 2021 NDAA again included multiple climate change measures, including directing DoD to update its climate change strategy, last updated in 2014.

The Administration will soon deliver a Fiscal Year 2022 budget request for your consideration that will, by all reports, have an increased emphasis on climate change. As you consider the request and develop the Defense Appropriations Act, particularly as you look at any increased resources that address the climate threat, I recommend you consider the following.

- Taking climate threats into account doesn't always cost more money. Sometimes it involves choices as simple as siting a building on higher ground, away from floodplains, or ensuring regional planning and wargames incorporate future climate scenarios. It will involve informing decisions with the best possible science and projections. The bottom line, though, is that DoD must incorporate climate as a consideration throughout the enterprise.
- Increased investments in predictive and intelligence systems will help the Department to prepare for these threats, and hopefully in some cases avoid them. While climate stresses can be a source of instability in different regions of the world, it is in our interest to anticipate conflict and act to head it off, but we need to ensure we have the tools that will help us do so.
- A greater investment in resilience is necessary and is aligned with mission. Even with current conditions, our readiness and installations are impacted by climate. When Tyndall AFB was leveled by Hurricane Michael, it not only damaged the buildings, it damaged multiple F-22s that were unable to evacuate because of their maintenance status. Climate risks put our people, our missions, our facilities and our assets at risk. Congress should consider increases in funding for pragmatic, preventative measures to increase DoD's resilience and to prepare it for unavoidable climate impacts. Ultimately, failing to prepare will cost more.

- While we must be resilient to near-term climate challenges we cannot change, the longer-term security threats of climate change are driven by greenhouse gas emissions. As I highlighted above, the Center for Climate and Security published a Security Threat Assessment of Global Climate Change last February, looking at the consequences of 2-degree and 4-degree warming scenarios. The security implications of these scenarios were catastrophic, and the only way to avoid them was to achieve net-zero emissions as soon as practical - by 2050 at the latest. DoD need not be the only part of that solution, but it can and should lead by example, increasing efficiency and using zero-emissions energy sources where appropriate. Frankly, most of these measures are yet again aligned with mission. We all want to achieve greater efficiency and reduced logistics requirements.

In closing, while the military has understood for many years the threat that climate change poses, the Biden Administration has significantly elevated its priority and the attention it is receiving. However, to realize this ambition and to ensure it is resilient to the climate challenges ahead, DoD will need your support.

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 03/17/2021

Hearing Title :

Climate Change, National Security, and the Arctic

Witness Name: Dennis V. McGinn

Position/Title: Vice Admiral, U.S. Navy, Retired

Witness Type: ☐ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☒ Self ☐ Organization

If you are representing an organization, please list what entity or entities you are representing:

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

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- ☒ I have attached a written statement of proposed testimony.
- ☒ I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include—

(i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(ii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

Appropriations

03/17/2—Climate Change, National Security, and the Arctic

False Statements Certification

Knowingly providing material false information to this committee/subcommittee, or knowingly concealing material information from this committee/subcommittee, is a crime (18 U.S.C. § 1001). This form will be made part of the hearing record.

D. V. McGinn Signature on File

03/15/21

Witness signature

Date

Biography for Dennis V. McGinn

Admiral Dennis McGinn served as Assistant Secretary of the Navy for Energy, Installations and Environment from September 2013 until January 2017. In this role, he led the transformation of naval installations toward greater mission resiliency through energy efficiency, renewable energy, microgrids, and other technologies.

Previously, Admiral McGinn served on active duty in the United States Navy for 35 years attaining the rank of Vice Admiral. He served as Deputy Chief of Naval Operations for Warfare Requirements and Programs, overseeing the development of future Navy capabilities, and previously commanded the United States Third Fleet. While in the Navy, he served as a naval aviator, test pilot, aircraft carrier commanding officer, and national security strategist.

Admiral McGinn is a former President of the American Council on Renewable Energy (ACORE) where he led efforts to communicate the economic, security and environmental benefits of renewable energy. Admiral McGinn is a past member of the Steering Committee of the Energy Future Coalition, Bipartisan Center Energy Board, and Co-Chairman of the CNA Military Advisory Board. He presently serves on the board of directors of the Electric Power Research Institute, Willdan Group, HALO Maritime Security Systems, Customer First Renewables and on the board of trustees for RMI.

Admiral McGinn holds a BS in Naval Engineering from the U.S. Naval Academy and was a Chief of Naval Operations Strategic Studies Fellow at the U.S. Naval War College.

Ms. MCCOLLUM. Thank you so much.

The members on this committee, before I became chair, heard me ask all kinds of questions about the Arctic and talk about some of the challenges in Africa, so I am going to save my questions now for the end of this round and let Mr. Ryan go next.

Mr. Ryan.

Mr. RYAN. Thank you. Thank you, Madam Chair, and thank you for prioritizing this hearing. I think this is a critically important issue. And, as our witnesses have testified, this has far-reaching implications for our military, our economy, our country. So I want to say thank you.

Happy Saint Patrick's Day to everybody. Glad we are getting right to work here on Saint Patty's Day. We can celebrate later.

I have got a couple of questions, and I would like Madam Secretary Goodman and Admiral McGinn both to kind of take a crack at this. You mentioned the electric vehicles, electrification, and how important that is. I want to kind of take a half a step back here, and I have had conversations with the chairwoman about this.

The ability for the Defense Department to spend money, to procure things, is an awesome amount of buying power and I think can shift the market in significant ways, whether we are talking about electrification or anything else. If you could just talk to us about—we did a call a couple days ago with the Energy Subcommittee with Bill Gates and his new book about, you know, saving ourselves from climate disaster, and part of the conversation was about moving into kind of green steel and cement.

And have we done anything within the Department of Defense, or have you looked at anything to say we are going to give preference to—as we are building things, we are going to give preference to those companies that are moving in that direction? And I know we are not there yet, but can you see that as a significant way to really begin to also be a part of shifting the market towards a greener economy?

And the other one I would like you to touch upon, too, we buy a—you know, billions of dollars' worth of food to feed our military, and one of the more progressive ways of capturing carbon is through sustainable and regenerative agriculture. So is there a way that we can say we are going to give preference to General Mills, for example, just to pick a random company out of the country, but General Mills, who is buying farms to do regenerative agriculture to supply their own food production?

I just think, if we are going to do this, there are kind of ways that maybe are one layer deep or two layers deep that could really begin shifting the market. I mean, if the Federal—if the Department of Defense said we are going to give preference for food contractors for those food production companies that participate 30 percent in regenerative agriculture in the next however many years or whatever we would do, we could significantly start capturing carbon and really moving the market.

So, if you could just comment on that, steel, cement, regenerative agriculture, how do we really do this in a big way aside from the technology and the other things that you mentioned?

Ms. GOODMAN. Okay. Thank you very much, Congressman Ryan, for that question.

It was about a decade ago now that the Department of Defense established energy as a key performance parameter in its acquisition system, and that led to being able to prioritize energy for the purpose of ensuring that there was adequate energy in our weapons systems for performance. Prior to that, at least we had always assumed we had energy at the front.

The next step—and there have been a variety of efforts to green the procurement chain—supply chain over the years. For example, I remember fighting hard to have recycled paper at The Pentagon back in the 1990s, and we were deploying the first generation of hybrid vehicles in the vehicles DOD leases from GSA. Now there are greater opportunities to advance that with electrification.

As you note, in certain sectors—in certain sectors—DOD does have substantial buying power because of its own mission needs. So where those mission needs align—and I would say that, given the President's executive order and the Secretary of Defense's strong statement, and including the Climate Working Group that has been now established in the Department of Defense to look at various lines of effort, there will be an effort to look at how appropriately to green the supply chain across DOD.

And that would include potentially, where cost-effective and meeting mission needs, the ability to, as you say, acquire either more agriculture that is based on more regenerative properties that conserves resources—as you say, conserves water, as—and leads us to a next generation, as well as in the energy supply chains.

As you know, DOD has been an exporter of technology for many years, from the internet to GPS, and I see that that could potentially happen again in some of these areas.

Mr. RYAN. Great. Admiral, any comment?

Admiral MCGINN. I think your question is right on the mark, Mr. Ryan, and I agree that the Department of Defense has tremendous buying power; indeed, the entire Federal Government.

And using that buying power in a very careful way—we don't want to spend money on much more expensive goods and services for DOD or for—indeed, for the entire Federal Government. But there are so many ways that we can put our thumb on the scale towards more sustainable products, whether it is steel, cement, agricultural products.

These are industries that, in many cases, are very, very close to very economic scales. And, by using that buying power to accelerate and extend the scale-up of these goods and services, I think it is right on the mark.

We don't clearly want to waste any money. We want to make sure that we are getting good value for every dollar. But we can do that in a way that has the double goodness of providing necessary materials to the Department of Defense and also provides preferences for American industries and American agriculture that can really have a beneficial effect across the economy.

Ms. MCCOLLUM. Thank you.

Mr. RYAN. Thank you.

Ms. MCCOLLUM. Great question, Mr. Ryan.

Mr. Calvert.

MILITARY INSTALLATIONS AND CLIMATE RESILIENCE

Mr. CALVERT. Thank you, Madam Chair.

I think this question, probably both our witnesses may want to participate in an answer. As I mentioned in my opening testimony, there are about 200 bases in the United States, and the military maintains and operates hundreds of other facilities abroad.

The need to climate-proof key military installations can be readily handled by seawalls, improved infrastructure reliance, and, as the worst case, relocation of bases to less vulnerable locations.

What percent of our bases at home and abroad need to be climate-proofed today, and what will that cost? Can the military leverage the private sector to incorporate new technology in future military construction projects?

So either Ms. Goodman or Admiral?

Admiral MCGINN. I would like to have Ms. Goodman go first because then I can say, "I agree with everything that Secretary Goodman says."

Mr. CALVERT. Okay. Fine.

Ms. GOODMAN. Okay. Thank you. Thank you, Vice Admiral McGinn.

Okay. Congressman Calvert, it is a great question. You know, almost all of our bases really need to be climate-proofed and made resilient. As was noted earlier, we are already paying billions of dollars to rebuild Tyndall Air Force Base, Camp LeJeune, and Offutt from the hurricanes that occurred in the last few years. So we need to flood proof, hurricane proof. We need to address permafrost at bases in the Arctic where it is collapsing.

So, as we do this, if we do it smartly, we will invest for the future. We will also be working with our communities in a way that makes them more resilient, too. And, in programs that Congress has authorized and appropriated to, there is increasing collaboration among communities. And I would say that is very important to continue because bases are part of their communities, whether it is in Norfolk or Annapolis or all around the country. And there are opportunities to do this in a way that helps lift up and make our communities and our bases and their military families stronger.

Admiral MCGINN. I would add, Mr. Calvert, that we have to have a prioritization system. Every installation in the United States and around the world could use more climate-proofing, if you will, or the additional of resilient design. But there has to be, because of budgetary considerations, a keen sense of priority.

It is not a question of if. It is a question of when. Climate-driven severe weather is coming to an installation near you. It can be any form. It can be wildfires out West. It can be flooding. It can be severe weather, hurricanes, et cetera.

So the idea is to look at those installations that are most vulnerable to the various types of threats and to try to invest in resilience. In many cases, it is not a lot of money. It is mostly being thoughtful about how you design a base, where you put things.

For example, if I have a building on an installation that is in a 100-year flood plain, probably be a good idea not to put the computers in the basement of that building. Just locate critical func-

tions in areas that are going to be less vulnerable to the flooding or other effects of wind or heat or whatever.

I think, also, thinking about how we actually use construction materials, cross-laminated timber is really, really seeing a resurgence. It is as strong as steel for very, very large buildings these days. So, using different materials can really have a double effect of good strength and also sourcing from very, very sustainable industries.

Ms. GOODMAN. And let me just add I think the private sector will be doing most of this work because that is how DOD will see technologies, whether it is climate-predictive capabilities or new resilience infrastructure, and there are going to be great opportunities for Americans at all levels across the country through the private sector from firms big and small to do the work of making more resilient our military infrastructure.

Mr. CALVERT. I know—I was over at Camp LeJeune shortly after the hurricane damage, and a lot of those facilities, which were built some time ago in a hurry during World War II and other times, but they weren't built to the code that we have today. And a lot of those facilities—certainly Tyndall is the same, but that—so today's building techniques, I think, more engages what we need to do, I would hope.

MILITARY BASES AND ENERGY SOURCES

One issue on energy are these new small nuclear reactors that we are using more and more of around the country that have exciting capabilities. I would hope we are looking at using those as a small energy sources at various military bases—

Admiral MCGINN. I would say, most emphatically, that nuclear power has to have a future in global energy portfolio. The development of small modular reactors of various sizes is in fairly early development stage. I would say that the—probably in the 10-year timeframe when we would actually have them in a form with the kind of function that we would want to have on various military bases.

They are part of a portfolio of energy choices, and—but I think we should, as the United States, boldly look at, what is the future of nuclear, and how can we make it a part? It is not a silver bullet, but it is part of a whole array of energy technologies that are emerging that can really, really help to diversify our energy sources and provide a lot more resilience.

Ms. GOODMAN. I would add nuclear has a central role in our energy future. And, also, Congressman, the Uniform Facility Code that DOD uses to—is being updated to account for the climate resilience it needs when it rebuilds its bases now.

Ms. MCCOLLUM. Thank you. Some of the same questions I had. Good questions.

Mr. RUPPERSBERGER.

ARCTIC SECURITY

Mr. RUPPERSBERGER. Okay. Well, first, thank you, Chairwoman McCollum, for putting together this important hearing today.

As a Member who represents the Chesapeake Bay watershed in Maryland, I am glad to have these distinguished panelists before

us today to help us and the Department of Defense be a leader, not a laggard, on the issue of climate change.

Now, coastal communities like my district in Maryland are home to 42 percent of our country's population and millions of businesses that supply most of our country's populations and millions of businesses that supply most of our gross domestic product.

We must better position the Department to tackle this problem. It is both a moral issue of protecting the planet for future generations and a very real national security threat that our panelists today have so eloquently highlighted.

Now the question is to both of the panelists. The security posture balance in the Arctic region has me worried. As more of the ice caps melt, the easier it is for nations to ignore the norms of securing cooperation in the Arctic and employ a go-it-alone strategy in a region that has historically thrived from skilled political cooperation because of the operating environment is so unforgiving.

Now, Ms. Goodman, in your testimony, you mentioned how important it is for the U.S. to lead on this issue to better enable our hand in geopolitical negotiations that concern the Arctic.

In your opinion, how big of a role does access to the region play? Does purchasing platforms that enable our access to the Arctic show our commitment to enforcing norms, or does it create a zero-sum game, or both?

Ms. GOODMAN. Congressman, thank you for that question.

I do think we need to up our game in the Arctic. We have a plan now—the Coast Guard has got an approved plan by Congress to build six new icebreakers to replace our aging one-and-a-half fleet. We need to move forward expeditiously with that. Our Department of Defense also needs to increase its Arctic capability.

And, in the last year, all the services—the Air Force, the Navy, and, just yesterday, the Army—have issued new Arctic strategies. These are important to tie together now at the overall Department of Defense level to have an integrated approach to the set of Arctic capabilities that we need.

And I am hopeful that we will take a whole-of-government approach because deterrence really is the best defense. By increasing our ability to meet our potential adversaries in the Arctic, that way we can hopefully continue to keep the peace but, at the same time, reduce risk of miscalculation of an accident that could require a search-and-rescue or a misunderstanding.

What sometimes keeps me up at night is increased ship traffic through the region. As you said, vast, still difficult to operate in. If communication among vessels—and increasing exercises have already led to tensions when U.S. fishermen were found in areas where the Russians were exercising in the Bering Strait last summer, and the U.S. and Russia are only 30 miles apart at their narrowest point.

So it is important for us to increase our presence in the region in order to keep the peace and keep stability.

Mr. RUPPERSBERGER. Okay.

Admiral MCGINN. I would add, Mr. Ruppertsberger, that, in addition to the traditional security threats that Ms. Goodman just outlined, the Arctic is having other effects. We are—have become familiar over the past few years with so-called polar vortex and the

tremendous harm that that can do, most recently in Texas and in Oklahoma.

Another aspect that is, I guess, more scientific but nevertheless ominous is the warming tundra in the Arctic tundra is releasing a lot of methane hydrates from deep below. There have even been explosions as this methane builds up, leaving craters that are a 100 meters deep.

So the Arctic is very, very important, and it is just a real indicator of the climate changing and the potential for very, very bad effects coming from that.

Mr. RUPPERSBERGER. Okay. And I was in Alaska with the commandant of the Coast Guard about a year ago, and literally right up to the—we could see the glaciers just melting away right before our eyes, and that has got to affect sea—the sea level issues that we are all dealing with right now in the coastal areas.

Ms. MCCOLLUM. Thank you.

Mr. RUPPERSBERGER. I yield back.

Ms. MCCOLLUM. Thank you.

Mr. Cole, I believe, has stepped out for a minute, so that will lead us to you, Mr. Carter.

DEPARTMENT OF DEFENSE INSTALLATIONS ENERGY CONSUMPTION

Mr. CARTER. Thank you, Madam Chairman, and thank you for this very important hearing we are having today, and I really appreciate our guests that have come to talk about this.

A number of critical energy projects of the U.S. military almost tripled from 2011 to 2015. And the Army, which, as you all know, I represent Fort Hood—its goal is to get to 25 percent energy consumed from renewables by 2025 and to be zero by 2030.

Fort Hood, Texas, right now is getting 50 percent of its power from renewable energy. 63,000 solar panels that are onsite, and 21,000 offsite wind turbines are producing 65 milliwatts for power.

How could the Department of Defense further lower energy costs in installations and lower its operational energy consumption and costs?

Admiral MCGINN. I have been impressed, Mr. Carter, by the tremendous deployment of especially wind power and increasingly solar power in Texas. It is a good example of us diversifying our energy portfolio in what is effectively the energy capitol of the world by getting less expensive, more sustainable renewable power as part of that critical resilient energy portfolio. And I think that not only the DOD but the entire economy is benefiting from a combination of renewable energy—solar, wind, and the addition of storage capabilities—batteries, if you will—and pump hydro—that can really, really help us to have sustainable and very, very much less expensive sources of energy.

BATTERY STORAGE

Mr. CARTER. And, as a backup question to you, you mentioned storage. To developing countries, that has been the big stumbling block over renewable energy.

Where are we on battery storage? Is DOD actively engaging in the research it takes for battery storage because I know the indus-

try is trying and trying, but at least the last time I looked, they weren't successful.

Admiral MCGINN. Couple of things. Near term, yes, the DOD is always doing good research related to energy storage, in partnership sometimes with NASA, the space operations. But, increasingly, as we deploy unmanned systems—surface, air, subsurface—they are going to need better energy storage in batteries. So that will contribute to the overall knowledge base.

However, the cost of batteries, the capability, the energy density of batteries is increasing significantly, and that is good news for many, many applications, military and civilian.

A little bit further term—let's say 5 to 10 years, the deployment of what is called green hydrogen is going to really be making a difference to capture the energy from the sun, from the wind, other renewable sources, and use it to maintain a baseload effectively of energy power for our various major grids as well as micro grids.

ELECTRIC VEHICLES

Mr. CARTER. And, if you had to convert to electric cars, the range of electric vehicles right now is—I guess the—probably the biggest range they have got is around 400 miles. And the average of the—is around 200 miles. So, in that situation, how does that fit the overall battle plan of American warriors with the limited resources, and how do you refuel on the battlefield?

Admiral MCGINN. I believe that the focus on electric vehicles initially for DOD will be primarily on nontactical—what I call nontactical vehicles. The good news is the industry is producing greater battery density and, therefore, greater range of electric vehicles of all sorts, whether it is a bus, a minivan, or a sedan, or even pickup trucks. I am personally waiting for a good F-150 electric. If they can do a Mustang that is electric, I think they can do a good pickup truck as well.

But I think the news—the good news is that the electrification of our transportation system is going to be good for our economy, first of all, and it is really going to be good for local, regional, and, of course, global environmental quality.

Mr. CARTER. Well, being from Texas, pickup trucks are really important to me, too. And, when they said they were going to have an F-150 out and then they backed off of it, it was discouraging for me, too, but I hope they will be victorious soon.

Thank you, Madam Chairman.

Admiral MCGINN. Yes, sir.

Ms. MCCOLLUM. Well, as a granddaughter of a Ford mechanic in Montana, all of this is very interesting from Mustangs to pickup trucks.

Mr. Kilmer.

SHIPYARDS RISK OF CLIMATE CHANGE

Mr. KILMER. Thank you, Madam Chair, and thanks for holding this hearing today.

I have got a dozen questions, but I will try to keep it to two. My first is for Ms. Goodman.

You know, we are seeing threats like rising sea levels and seismic shifts and shoreline erosion and erratic weather patterns that

really have the capacity to compromise the security of military bases across the country, including naval installations. Puget Sound Naval Shipyard in my district is undeniably vulnerable to climate change and represents a single point of failure for carrier maintenance in the Pacific.

In response to the growing need to counter threats brought about by climate change and to shore up our public shipyards, the Navy created an investment strategy called the Shipyard Infrastructure Optimization Plan, or SIOP, which is a 20-year, \$21 billion effort to modernize these shipyards to increase their climate resilience, to improve resistance to earthquakes and other natural disasters.

That is one piece of a multifaceted solution necessary to address a problem the size and scope of climate change. Another that comes to mind, although maybe not directly created for this purpose, is the Defense Community Infrastructure Program, DCIP. That is a program created in 2019 that was designed to address infrastructure deficiencies in communities surrounding military installations.

And those grant funds can help to preserve military readiness and security, and I am thinking of examples of, you know, off-base infrastructure that may be vulnerable to climate change. It strikes me that Congress needs to work in coordination with the DOD to keep these programs like SIOP and DCIP on track.

I would love to just get your sense. Do you think that the effects of climate change will outpace these mitigation efforts, and how important do you think it is for Congress and the DOD to look for areas to accelerate programs like the SIOP and like DCIP?

Ms. GOODMAN. Mr. Kilmer, thank you for that question. I think it is absolutely essential. Those are two good programs that you mentioned. They are critical. Only with that investment and ambition and commitment of the Department of Defense to these and other programs will we be able to ensure that both our military infrastructure, for example, in your key district and in many others, is—becomes resilient to these climate threats, rising sea levels, extreme weather events, ocean acidification in your region as well, as well as water scarcity, flooding, drought in other regions.

And so those are two very important programs. And what is particularly important about the second one you mentioned is the opportunity to work with the community because I think that is also essential.

And I am pleased that Congress has continued to broaden the authorities for DOD to invest in conjunction with communities because some of these investments are better done when there is a cost sharing. For example, that program you mentioned has cost sharing also. The REPI program, the Readiness Environmental Protection Initiative, enables cost sharing between communities and DOD. And that is also going to be continually important in those areas and others in order to maximize the benefit.

So thank you for raising that. I think these are very important programs for our future.

Mr. KILMER. Thank you.

DEPARTMENT OF DEFENSE BUILDING MATERIALS

Admiral, I wanted to follow up on Ranking Member Calvert's question. It seems like another way in which the DOD can be part

of the solution is through innovative building materials. You know, the Department is one of the largest builders on the planet.

You mentioned cross-laminated timber. I think there is a real opportunity there because it has a smaller carbon footprint than steel and concrete. It comes from a renewable resource.

CLT isn't alone. We have seen incredible uses of recycled composite material. In my district, we have something called the Composite Technology Recycling Center that incorporates recycled carbon fiber into products to reduce weight and increase strength and promote sustainability.

I want to get your sense, Admiral. What steps would you recommend to ensure that the DOD is taking advantage of innovative and alternative building materials? You know, are there enough resources being invested into developing new technologies, and how can Congress help on this front?

Admiral MCGINN. I think promoting—it is a great question. Promoting interaction between the public and private sector—in this case, DOD—and the building—advanced building industry is really, really critical, so that we break free of the old model of stick building on site, that we can move towards modular construction, new materials like CLT, and really, really take a look at how we actually design buildings, how we design facilities so that they are, by design, very, very much more efficient and effective and resilient.

So I think that what the Congress can do is, in guidance to the Department of Defense, indeed to the Federal Government in all procurement for our buildings, to look for opportunities for private—public-private coordination and to try to remove barriers that may exist from old legislation that prevents the type of partnership that really shares risk, shares reward in approaching our building industry in new ways.

Mr. KILMER. Thank you, Admiral.

Thank you, Madam Chair. I yield back.

Ms. MCCOLLUM. Thank you.

Mrs. Kirkpatrick.

LOWER ENERGY COST

Mrs. KIRKPATRICK. Thank you, Madam Chair.

I just have a couple of questions. My first question is for both of the witnesses.

The Department of Defense is the single largest energy user in the United States, and energy consumption is a significant cost to the Department and the services. So this is just sort of a follow-up question to Representative Kilmer's question.

Transitioning to green energy in the Department can introduce efficiencies and reduce logistical requirements. So I guess my question is, how can the Department further lower energy costs at installations and—as well as operational energy consumption and costs, and are there enough resources being invested in energy innovation within the Department?

Admiral MCGINN. Sherri.

Ms. GOODMAN. Okay. Thank you very, very much, Ms. Kirkpatrick, for that question.

I think DOD has already invested a lot in recent years in improving its energy posture, but it can do more today. And there are many good—particularly in research and development to meet the military mission, there are some good programs. Among them, the Strategic Environmental Research and Development Program, the Energy Services Technology Certification Program, and a number of others also in the services. They do the good basic RDT&E. They do the demonstration validation. The challenge is to get over the valley of death and now deploy many of these new technologies for use.

In your district, of course, we have one of the largest solar arrays, you know, at Davis-Monthan, and that is important. We can do more of that now that the cost of wind and solar has come down. But, as has been noted, there is more we can do in batteries, in energy transmission infrastructure.

By setting the right targets, such as the Black Start exercises, which set a goal of being able to go without power from the grid for approximately 14 days, those increase—those incentivize the right type of investment. And there will be other goals, I am sure, that the Department of Defense will work on to help incentivize investment, and I think we will begin to see that R&D pay off as we also get some spinout into the commercial sector and we allow technologies to come into our work.

Admiral MCGINN. I would add that an inherently efficient military force, whether it is Army, Navy, Marines, Coast Guard, Air Force, is a more effective force. You can go further, stay longer, and carry more of your—whatever the payload you have if you are inherently more efficient in an operational energy sense.

Clearly, on the installation side, the same thing applies. There was a great study about, I would say, 7 years ago by MIT Lincoln Labs that took a look at the benefits of centralizing emergency backup power so that you eliminate individual diesel generator sets for—scattered across an installation for emergency backup. They tend to be dirty, they tend to be unreliable, and they tend to be expensive to own and operate them and to procure them.

So centralizing backup power and improving installation distribution is going to be a great contributor to greater resilience.

Mrs. KIRKPATRICK. Thank you.

Thank you, Madam Chair. I yield back.

Ms. MCCOLLUM. Thank you.

Mr. Cuellar has stepped out. Mr. Cole has not returned, so we are going to go to Mr. Crist next.

FLOOD RESILIENCY AT INSTALLATIONS

Mr. CRIST. Thank you, Madam Chair. Thank you for holding this very important hearing.

The Tampa Bay region in Florida, where my district is located, is one of the most at-risk areas for storm surge from hurricanes in the world, comparable, in fact, to Miami and New Orleans in that regard.

It has been nothing short of a miracle that we have avoided a direct hit for a very long time now since back before most of the area was settled and before MacDill Air Force Base, home to CENTCOM and SOCOM, was founded on the waterfront of Tampa

Bay, including in 2017 when Hurricane Irma struck Tampa Bay as a major hurricane, while MacDill largely avoided damage from that storm.

Admiral McGinn, what is the Department doing to improve flood resiliency at installations like MacDill where they are failing—falling short, rather—excuse me—and what can be done to either help them or push to do even more? Please, sir?

Admiral MCGINN. I think, Mr. Crist, the first thing that they are doing is they are looking at where are their critical assets, the most vulnerable ones? What are the single-point failures for a mission? MacDill, of course, as you know, with all of those Special Forces, Central Command operations, absolutely critical that they can sustain any type of weather and continue to do the mission.

I think that taking a look at where are their electrical system vulnerabilities, where are the necessary pumps to reduce or to mitigate flooding, where are critical buildings, can there be a relocation, not writ large but selectively, to put critical functions in better locations or raise them up on upper stories of buildings, have methods of taking flooding in lower floors but be able to remove it but still keep the lights on and the function?

It is a very tough engineering challenge but one that we have the ability to do, and I think our Navy Seabees and our Corps of Engineers are very much up to the task, especially if they work with the private sector and the good ideas and innovations that are out there.

Mr. CRIST. Great. Thank you very much.

There seems to be a misconception out there that the threat of climate change poses to our facilities is only from storm surge or hurricanes. And, while that may be the case in many situations, the fires in California and the record-breaking inland low pressure system that flooded Offutt Air Force Base in Nebraska show that climate change can have consequences that are beyond what first it was imagined.

For either of you, what have we learned over the past 5 to 10 years about the full effects of climate change on our installations and defense infrastructure, and what is the Department doing or not doing to respond thereto?

Ms. GOODMAN. Well, thank you, Mr. Crist.

Yes, the Department has learned that it needs to address all the threat multipliers of climate change, from fires to floods, as well as sea-level rise and extreme weather, and drought in certain parts of the region which affect water availability at bases and communities.

At Offutt Air Force Base in Nebraska, that severe flood really showed what Vice Admiral McGinn just said, where the new command headquarters—that was the newest building on the base and was built on higher ground—rode out the storm fairly well. It was the older, lower-lying buildings that were much more subject to damage. We have learned that the hard way.

Now, the wildfire is a particular challenge out in the West, and that is going to require both reducing, you know, the fuel load, so changing how we manage energy overall, the fuel load in the forests, and recognizing that conditions have gotten hotter and drier but also looking at new building materials, new energy systems,

and being able to take further preventive action being able to address these fires early on and reduce the fuel load so they don't get as dangerous.

Admiral MCGINN. I would add that we are in a race against time. You know, the great author, Tom Friedman, said Mother Nature always bats last, and she always bats a thousand. And I think that we are seeing weather phenomena that are literally unprecedented, certainly in modern history.

We really, really need to focus on resilience from all sorts of things. It is ironic that last—late last summer, California suffered widespread power outages due to a heat wave. Yet, just a few weeks ago, Texas and Oklahoma suffered terrible, terrible damage and suffering because of a polar vortex. Hot, cold, the manifestations of severe weather are quite varied, and we need to be prepared geographically for the most likely ones.

DAMAGE FROM EXTREME WEATHER EVENTS

Ms. MCCOLLUM. Thank you. I haven't asked a question yet. I want to kind of follow up on a little bit of the theme we heard here, especially from Mr. Crist.

So I am going to talk about Tyndall Air Force Base and kind of what all happened there and paint a bigger picture.

So, in your written testimony, Admiral McGinn, you talked about the Category 5 hurricane there in 2018. Could you expand a little more about the type of damage the base infrastructure went through and the F-22 squadron sustained there and then just about how we had to move resources all over, the aircraft, which has potential effect on our readiness? Can you kind of paint a bigger picture of what one of these catastrophes really looks like in the broad sense?

Admiral MCGINN. Yes. Basically Hurricane Michael coming as it did from due south of Tyndall in the Gulf of Mexico, very, very rapid escalation to a Category 5 when it came ashore, did not allow a lot of time for preparation, although given the severity of the storm, the wind and surge, even more preparation wouldn't have significantly altered the damage. The wind force damaging buildings unbelievably. F-22s that were stationed there at Tyndall, not all of them were in a maintenance condition that allowed them to fly away to hurricane evacuation, to inland bases. So those, because of the damage to, literally construction of some of the hangars, were also severely damaged.

So I think the lesson is we need to know that our installations are in the path of various severe weather events. In this case, along the Gulf, Florida, the Atlantic Coast, hurricanes are clearly one of the most frequent and significantly damaging phenomena. So we need to be prepared for that.

Ms. MCCOLLUM. Thank you.

I am going to turn it over to Ms. Kaptur. We will have time for a second round.

Ms. Kaptur.

DEPARTMENT OF DEFENSE POSTURE TOWARDS CLIMATE CHANGE

Ms. KAPTUR. Thank you, Madam Chair, very much.

And I thank our guests, Secretary Goodman for sure and Admiral McGinn.

I am very interested. I was one of the people who in the nineties that was fighting for an energy focus at the Department of Defense, and we finally got one to some extent. I have a few questions here. Do you think the Department has taken this newest challenge, climate change, and the initiatives it needed to seriously in the way the Department itself has structured its operations? Which military service do you believe has taken the lead?

And if the answer is Navy, is that because, Admiral, with the warming oceans, you felt it first? I am just curious.

And then I would like both of your recommendations on where to go in our country or world where you see real innovation occurring at the Department of Defense? Because this issue of climate change and energy gets lost in the mammoth nature of the Department. Where can I go to look at real leadership in innovation and application in overground transportation, number one; number two, hydrogen fuel cells, current generation and next generation, battery storage; and, finally, base energy independence? I represent the first Guard base that flew a biofueled plane almost 20 years ago and but it was an exception, not the rule. It was on the cover of Guard Magazine at the time. We were very proud of that as biofuels have come online in our country.

I have found the Department laggard. I don't find the Department a leader, and in the clean energy mandate and in the area of innovation, it tends to get lost somehow. I am just curious. Do you think that, again, the Department has really taken this seriously? Are they structured to properly deal with it in the way that they have handled the assignment of duties inside the Department? Which department has taken the lead? And, finally, could you name me the three locations on overground transportation; hydrogen fuel cells, current and next generation, battery storage; and then base independence, where?

Admiral MCGINN. I would start by saying that the entire Department of Defense gets it. They see renewable energy and various other forms of energy, including hydrogen, hydrogen fuel cells, and other means as a key part of their mission.

In many cases, however, over the past years, the Department has very wisely used commercial off-the-shelf energy technology. I am reminded of the wonderful United States Marines in Afghanistan deploying commercial solar panels to forward operating bases in order to reduce the reliance on oil convoys, which were very, very deadly to our young men and women in uniform over there.

But I would start, of course, with the Department of the Navy. We did do a lot there and continue to do a lot, but so does the Air Force and the fuel research going on at Wright-Patt, at the Air Force research lab, is really, really helpful. It is done in many cases in coordination or certainly trading technology stories with civilian aviation.

I think that the future for hydrogen is very, very bright as a storage medium and as well as a producer of electricity using fuel cells for both transportation as well as for onsite power.

I would specifically point out that Secretary of Defense has named a senior climate advisor directly reporting to Secretary Aus-

tin, and his name is Joe Bryan. He is innovative. He is smart. He is experienced. I know this because Joe was the Deputy Assistant Secretary of the Navy for Energy when I was the Assistant Secretary. He is a great example of the recognition of the need for science and innovation and asking the questions about why can't we move further, why can't we move faster.

Ms. KAPTUR. DARPA, are they doing anything that you are aware of?

Admiral MCGINN. I am sorry. Who was that?

Ms. KAPTUR. DARPA, Defense Advanced Research Projects Agency? I am looking for—where do I go for overground transport? Do I go to the war and tank command? Where do I go to see the future within DOD?

Admiral MCGINN. Right. I would start with DARPA. That is a good spot. I would also check in the Department of Energy with the Advanced Research Projects Agency for Energy, ARPA-E, and you would also want to take a look at some of the DOE laboratories and how they are coordinating in some cases with the Department of Defense laboratories and technology centers.

Ms. GOODMAN. I would also add, Congresswoman, as I have stated in my testimony and I have said elsewhere, I think the Department of Defense, in addition to the very good efforts that are already being made under the current Secretary, Secretary Austin, and the new current climate advisor, Joe Bryan, could benefit from having a clean energy innovation office that pulled together a lot of the work that is—some of the work that is ongoing and that can be further magnified by clear lines of investment and also a clean energy transition fund to help us get over this valley of death. When there is good research and development coming out of our labs, private sector or government labs, sometimes there is a lag between getting it actually into use because the demand signal isn't always there at the buying level. And a transition office could help get us beyond that.

Ms. KAPTUR. Thank you so much.

Ms. GOODMAN. Excuse me. A transition fund.

Ms. KAPTUR. Thank you, Secretary Goodman. And you think that should be within the Department of Defense somehow, in its contracting operations?

Ms. GOODMAN. I think it should be, and it should be modeled on other things we have done when we wanted to spur innovation in other types of technologies.

Ms. MCCOLLUM. Thank you.

So, Ranking Member Calvert, we are going to go to a second round of questioning. I would like you to lead that off if you have another question.

CLIMATE CHANGE IMPACT ON PLANNING AND OPERATIONS

Mr. CALVERT. Thank you. Thank you, Madam Chair.

Yes, it is an issue, as suggested, that increased probability of droughts, floods, famine, disease, loss of habitable land, other large-scale natural and humanitarian disasters will create problems for communities and governments abroad.

So to what extent do our geographic combat commanders need to factor in the potential impact of climate change across their spec-

trum of planning and operations? Secondly, if there should be a core requirement of the GCCs in how they undertake a cost-effective way without falling prey to institutional overreach in owning an issue that may more properly be the domain of the Department of State, USAID, and others in the inner agency, how do you approach that?

Ms. GOODMAN. Well, thank you, Congressman.

I think it is vitally important that climate security be integrated into our security engagements arrangements, security engagements which are principally conducted by our combatant commands.

You know, in the 1990s when I served as the Deputy Under Secretary of Defense in a different era, we were conducting environmental security engagements with each of the combatant commands to address the environmental challenges of that era, which were largely cleanup of contaminated bases, complying with air, water, and waste laws, conserving endangered species. That, of course, all continues. Today we are in the climate era. Those combatant commanders can use these same kind of environmental security engagements addressing climate security threats.

For example, Pacific island nations, many of them, you know, who depend very much on American security see increased approaches from China to being the provider of the first resort when they have an extreme weather event, facing food and water insecurities. The U.S. should be right there, working with them and in other regions of the world and can do so, can integrate climate security into its theater engagement plans. There are new improved Earth system observation capabilities that can be utilized to enable better planning and to be shared in some cases with our allies and partners as well.

Admiral MCGINN. I think the record of the U.S. military throughout the world but especially in the India and Pacific Ocean area is really remarkable, especially in terms of humanitarian assistance, disaster recovery operations. You just can't as a combatant commander or any of the subordinate service commanders avoid that responsibility.

So I think, as Ms. Goodman pointed out, engagement with other militaries, other nations, civilian and military, about how can we do things together that will increase the resilience in a particular region, whether it is an island nation or coastal nation, that will help to mitigate the worst effects of some of these typhoons and other phenomena that are coming our way, increasingly in terms of intensity and frequency.

Mr. CALVERT. Thank you, Madam Chair.

Ms. MCCOLLUM. Oh, you are welcome.

Great. These questions have all been fabulous, and the answers have been enlightening. Thank you.

Mr. RUPPERSBERGER.

COMBATING CLIMATE CHANGE

Mr. RUPPERSBERGER. Well, firstly, I am going to go from the Arctic now to more global and then district. My district is a coastal community with many DOD entities including Army, Aberdeen Proving Ground, and an Air National Guard base right on what we call Middle River of east Baltimore. I am also the chairman of the

U.S. Naval Academy Board of Visitors in Annapolis, which fights for funding every year to protect itself against sea level rise. In our most recent hearing with the Naval Academy about 2 weeks ago, Admiral Buck mentioned the strategy to address sea level rise, but he said it could take to 2035 to complete base on funding levels and that is just totally unacceptable.

With the sea level rising and the aging of the Naval Academy, they have real issues and problems with sea level. We just built, the Naval Academy just built their newest building, a cyber building, which was constructed with the sea level in mind, rising in mind. It is a pretty unique building. Other than that, there are a lot of other issues that are there.

I know that Ms. Goodman mentioned things that we can do for sea level and one of those was to create, I think, at DOD a clean energy office and a transition fund, but basically my question, you know: How does the Department—do they have the tools to assess global warming, sea level rise? In all of these installations, I think, the last one I heard in your testimony, billions of dollars it will cost and aging. So we really have to deal with this, or it is going cost us a lot more money, and an example of that is the United States Naval Academy.

So, if you could relay, again, what steps do you recommend, I know some of them Ms. Goodman had mentioned, to better address these issues on a defense-wide basis?

Ms. GOODMAN. Well, thank you, Congressman.

I mean, Congress has already directed DOD to integrate resilience into its military installation resilience plans, and Secretary Austin has said that work is already underway. I believe the Department now will begin to accelerate that work per the requirements both of the President's executive order and its own direction. And the question for—the issue is going to be first doing the planning but then, as you say, putting the money on the project, sort of invest—the investments that are needed.

As we all know, it is often the infrastructure accounts that are underfunded in the Department of Defense historically—historically. So that is going to have to be re-prioritized within the way the Department does its investments. I am pleased to say that I believe, you know, the Department is looking at that right now, how to set those priorities, how to ensure that critical facilities like the Naval Academy don't have to wait until 2035 to become more resilient.

This is going to require some new ways of doing business for the Department of Defense, to give greater priority to the investments needed based on those resilient plans that will be coming forward. As you say, at the Naval Academy, they already have a plan. Other bases are coming forward in the coming year or so. Then those investments will have to be prioritized. It is my hope—go ahead.

Mr. RUPPERSBERGER. The Naval Academy's plan is totally inadequate going out to the year 2035. It is not going to work.

Ms. GOODMAN. Right. So there have to be some priorities set to occur within the next several years probably and certainly a substantial investment within what we call the FYDP, the 5-year defense plan, and so the Secretary and the services are going to have to make some choices about those important investments.

Admiral MCGINN. One of the positive aspects, Mr. Ruppertsberger, is that you as the chair of the Board of Visitors and Admiral Buck as the superintendent, you get it. It isn't a question of, gee, I hope we don't have a hurricane here or tidal surge of the Severn River. And knowing that it is inevitable will motivate the kind of thinking and investment in protecting these critical assets right along the river.

Mr. RUPPERSBERGER. It seems the timing is right for global warming, for dealing with these issues. You have the Secretary of the Defense is making it a priority. Betty McCollum, our chair, has made this a priority. This is the first hearing we have had. I have been on this committee for a long period of time. I think the chairman and I have talked about maybe going to the Naval Academy so she can see some of these issues. We will probably do that in the next 2 or 3 months.

So I think the timing might be right with all the players that we have here is going to focus on this issue so we can plan, including plan on what needs to be done from an infrastructure point of view to prepare ourselves because the Naval Academy is not going to move, but the water keeps rising.

Admiral MCGINN. I talked to Professor Flack, who is a professor at the mechanical engineering department at the Naval Academy, doing wonderful things over the years with educating midshipmen on energy and environment. That is Professor Flack.

Ms. MCCOLLUM. Okay. I think Mr. Calvert was trying to be recognized.

Mr. CALVERT. Yes. I just wanted to point out, Madam Chair, the Naval Academy and other bases also, which is also a problem, is a lot of these bases were built on fill and certainly the Naval Academy a lot of it is on fill. You have the subsidence that is occurring on ton of it. So these areas are literally sinking.

So, you know, so sometimes you can throw a lot of money at this problem in the seawalls and the rest, but if your underlying foundation is weak or failing, you may have to look at other considerations to fix it. I don't know. It is going to be expensive. I know that.

Thank you. I just wanted to point that out.

Ms. MCCOLLUM. I think that is a good point, and we have got a partner in Chairwoman Wasserman Schultz with MILCON. A lot of these are MILCON projects, but we know that they are going to affect our readiness and ability to move forward. So I look forward to our committee on not only working with the authorizers on this but working with MILCON. There are certainly things we can do. There are other things that MILCON does do, and I think this is a unique opportunity for the three committees to, you know, really sit down. And we can tell the story of what is happening. They can look at their budget for what is planning and then work with the authorizers on how to move forward, but we can't afford to waste any time.

With that, Mr. Carter.

ICEBREAKERS' IMPORTANCE FOR THE ARCTIC

Mr. CARTER. Well, thank you, Madam Chairman.

And being ranking member on MILCON myself, I can tell you that is a pretty small budget as it compares to DOD, and we have MILCON projects that are emergencies, and we have talked about a couple of them today, and we have to have the deep pockets of DOD involved in order for us to do this. I just have to point that out because the MILCON budget is a small budget as it compares even to the VA budget. So it is a challenge.

Ms. MCCOLLUM. Mr. Carter, ranking member of MILCON, I couldn't agree with you more. I am just not going to go in somebody else's jurisdiction. So we will work together on that, sir.

Mr. CARTER. Absolutely. Absolutely.

Ms. MCCOLLUM. Your question.

Mr. CARTER. The other thing I want to raise, going back in history to when I was the chairman of Homeland, the icebreakers. We don't have the money for those things in the Homeland Security budget either, and we were trying, and I think successfully, to partner with the Navy on that first one. I don't know if anybody knows whether that is still going on or not, but it is going to have to be a partnership with the big boys to get seven icebreakers in the Arctic. If we don't, we are going to literally lose jurisdiction in the Arctic.

Ms. GOODMAN. Congressman, you raise an important point that adding six icebreakers into the Coast Guard's budget could be a budget-breaking effort for the small service that it is. The Navy has historically had a lot of other priorities in its budget, other big-ticket items. I think it is going to take a whole-of-government effort and a look from the top at overall what we need in Arctic capabilities and to be able to set the right overall level of investment and then decide how it is going to be made across the Federal Government because we have to be able to up our capability to have presence in the Arctic, both across the Department of Defense and across the Coast Guard and other agencies. Research in the Arctic continues to be very important so we can understand those changing conditions and plan and prepare our forces to be able to operate there.

There are a variety of agencies across the Federal Government that are very important, and thank you for pointing that out. It is going to take an effort coordinated probably through the White House with the relevant Federal agencies.

Mr. CARTER. And with all the climate change issues we have got in the Arctic and with the shipping that is now going into the Arctic, the rescue mission of one icebreaker that can be effective in heavy ice and should there be a disaster from what we now calling the Northwest Passage, it could be a real Earth-shaking disaster if it was some kind of cruise ship full of people that got in big trouble. To reach them without an icebreaker could be a real disaster, in addition to the climate issues that are up there and the jurisdiction issues. I want to keep emphasizing everybody has got to be thinking about icebreakers. We need them.

Now back to my question and I still got a little time left. The Biden administration has set national security objectives. In those, their last security guidance, they mention near-peer competition by non-state actors, infectious disease, cyber attacks, and disinformation campaigns.

Where would you put a climate change initiative, which General Austin and the Secretary have put forward, where would you put that in the ranking of what the administration has given? It is not concluded now, but it is one of those national security guidances that probably should be. Where do you think it should be put?

Ms. GOODMAN. I think it should be there with the others, and I believe it is included in the President's interim National Security Strategy, perhaps not quite in that sentence but elsewhere in the direction, to address climate threats and it should be included because it affects all those others. Changing climate, drought, and food insecurities are increasing the opportunities for extremists, violent extremists, across North Africa, the Middle East, and in South Asia. That brings our forces, your forces from Fort Hood and elsewhere are all called up to serve when our Nation is threatened.

Mr. CARTER. Right now. Right now.

Ms. GOODMAN. Correct.

Mr. CARTER. They gave us a guidance, and there was a conversation about climate change in there. That is correct. I think we should prioritize it.

Ms. GOODMAN. I heartily agree.

Mr. CARTER. Maybe it is being technical, but if you don't make noise, you don't get things done.

Ms. GOODMAN. Exactly.

Mr. CARTER. I yield back.

Ms. MCCOLLUM. Thank you.

Ms. Kaptur.

LEADERSHIP ON NEW ENERGY SYSTEMS

Ms. KAPTUR. There is a disadvantage to a few minutes.

And I want to go back to my original questions from the last round because I didn't get clarity on where in the U.S. military you could look for a site visit to the place that is doing the most on advancing overground transportation in new energy systems. I heard what was said about ARPA and DARPA. I know them well. I am asking, who is taking leadership?

In the same ways we have Blue Angels and they do shows, air shows across the country, I really don't see the Department of Defense being a leader publicly in some of these areas in which we so desperately need advancements.

For example, the war and tank command, which is at the doorstep of every major U.S. producer in Michigan, they don't take a public lead in terms of new transportation systems. They don't have a Blue Angels type show or anything like that that would inspire the public. I don't really see any base energy independence pride in the way the military presents itself. So perhaps the gentleman you mentioned that has just been appointed by Secretary Austin, perhaps he will be helpful in this.

I have found a real resistance or just lack of consciousness in the Department in general, despite your—both of your—stellar efforts to make a difference. So, again, I ask, are you aware of any place in the Department that is showing direct leadership in moving these critical sectors of overground transportation, new fueled flight, new energy flight systems, some of the storage arenas where

we know that we have to make progress? Is there any base? Is there any person? Is there any division that you can point to?

I know the Marine Corps has done an astounding job overall, but, again, the Department hasn't really coalesced its progress in any way that is understandable to most Members of Congress and the American people.

Ms. GOODMAN. It is such a good question. Here is what I would like to see. You know, the Department of Defense has awards in many categories, and I am familiar with its environmental and installation awards because, for 8 years, I gave them out as the Deputy Under Secretary of Defense for Environmental Security. We gave the awards out at the installation and at individual level for cleaning up contaminated sites, complying with air laws, complying with water laws, complying with waste, conserving natural resources, conserving cultural resources.

Vice Admiral McGinn may have more familiarity. I think we should look at creating new award categories along some of the lines you mentioned, and that will encourage the competition and incentivize the Department. It is not to the exclusion of certain funds that I mentioned earlier. By creating an award and recognizing leadership in certain new categories, such as the ones you have mentioned, I think we will give the Department an opportunity to bring its best forward.

CULTURE CHANGE

Ms. KAPTUR. Thank you, Secretary Goodman. I am so glad to hear you say that.

Let me just point out in the air shows, if I go to the Air Force and look at them, the air shows come and always do a preshow field display. Usually they have this giant truck that shoots flames out the back. Okay? So, the military has figured out how to do that. Why don't they bring forward new technology, hydrogen fuel cell vehicles or new fuel advanced biofuel vehicles? Why don't they teach the public? They don't do that after all these years. So I am not yelling at you. I am just frustrated as one Member who is tried to make a difference in my little puddle, you know. I see this mammoth department, and I don't see a rollout that is impressive. Thank you for the suggestion.

Admiral MCGINN. I would say the culture of the Department is changing. I served in the Obama administration, second term, and there was a lot of emphasis on renewable energy, energy efficiency, sustainability, environmental care, and that eclipsed somewhat over the past administration that is unfortunate. Nevertheless, culturally, in the services, in the Department of Defense people are still doing their job.

I would point to Marine Corps Air Station Miramar out in San Diego as an example of an installation that has worked very, very hard to try to get to net zero. The Marine Corps down in Logistics Base, Albany, Georgia, has done a tremendous amount of work in terms of sustainability and energy independence from the grid if it is needed. So there are many pockets. I mentioned two Marine Corps bases. There are many fine Navy bases: Naval Base San Diego; right down the Chesapeake Bay from Washington, Patuxent River Naval Air Station.

I think this culture of really highlighting how important and essential sustainability and fighting climate change and turning the challenges into opportunities will bring out, if you will, the bragging rights of many of the services and many of the installations that are doing some really, really good stuff, including to your point about transportation.

GLOBAL IMPACT OF CLIMATE CHANGE

Ms. MCCOLLUM. Thank you. I am going to wrap kind of—take us back to the beginning of your testimony again and kind of wrap around it. We talked about, you know, the effects of climate change on our bases right here in the United States and some of our bases around the world.

We talked about the effects of the climate change in the Arctic and China and Russia and, you know, the extreme weather and how there is so much more work to be done there.

In your statements, you also mentioned about climate change just isn't happening here in the United States or in the Arctic; it is happening all over the world. I have had the opportunity to be in different parts of the world and experience what is going on with climate change, whether it is talking to political leaders or talking to people who live in those communities.

Climate change can exacerbate environmental, social, economic, political drivers of instability and conflict. Climate change variability has intensified economic and resource insecurity across the continent of Africa, throughout the Middle East, leading to mass migration, the displacement of vulnerable populations. That is part of what is happening in our border is climate change with what we are witnessing with some of the people who are fleeing the effects of climate change in Central America.

In turn, these populations, though, especially in Africa and the Middle East, are more susceptible to recruitment by extremist groups and exploitation by terrorist groups.

I am going to give one example and then ask a question. So I have been in the area of Africa. I have been in Chad, and Lake Chad is a water source for more than 30 million people. It has shrunk to less than one-tenth of its size compared to just 50 years ago. It has led to population displacement in a region that is very volatile, and we know that extremist groups are constantly trying to get a good foothold in there.

What role can the Department play in preparing for regional and global instability to major climate change events? Maybe you could give us an example either in the Sahel or something that you have seen in Africa to round this off before I close the hearing.

Thank you.

Ms. GOODMAN. Thank you. Well, if you overlay in Africa our deployments in recent years to combat violent extremists, it coincides almost perfectly where—the regions where we see the severest climate threats, around the Lake Chad region, Mali, and Nigeria, and a few other locations across Africa.

So, as part of our defense planning through Africa Command, for example, in particular, understanding the underlying causes of climate threats, the drought, the food insecurity, the shrinking of Lake Chad that has enabled Boko Haram and others on the Nige-

rian side to take advantage of vulnerable populations that has sent herders, farmers, fishermen fleeing the region because they can no longer support their livelihoods and their families in that area.

The long-term solutions to the climate challenges are primarily not through military action. They are going to be through development and diplomacy, through local action. In those parts of Africa, you mentioned, our European partners are very deeply engaged. And climate insecurity activity in Europe very much means working with development and diplomatic agencies. I think we in the U.S. can be, should be doing more of that ourselves to round out the totality of our approaches. I think that is where this administration is headed in its climate security, foreign policy, and national security planning to integrate those approaches so we have an integrated approach to the diplomacy and development that is needed in these regions to enable sustainable livelihoods with military forces using their tools, their tools that are reasonable, whether it is security forces or combatant commander engagement as a backup capability to support further sustainable action.

Admiral MCGINN. Chair McCollum, I would also point to South Asia as a critical area that is being affected by climate change. With shrinking ice capping glaciers in the Himalayas that feed or don't feed, in some cases, the four sacred rivers that flow through India, Bangladesh, and Pakistan, we have a recipe for regional strife as it is alternating floods in some years or drought in others, from those rivers that have been so essential to sustaining the people in that region. We really, really need to make sure we are engaging with those nations at the combatant commander level and really at the head-of-state level to make sure that there is some sense of unity to try to recognize the common enemy of climate change and to try to do some things that increase resilience and to reduce the adverse effects on populations in that very, very critical region of South Asia.

Ms. MCCOLLUM. Thank you. Thank you both for your testimony.

And that is a good note to land on because there is a role for the Department of Defense, as Judge Carter pointed out. There is a role for Homeland Security. There is a role for MILCON. But there is a role for the whole of the United States Government to be addressing climate change, and that is why I am so glad we are back in the Paris climate accord because if we are not looking at this through a whole of government and working internationally with allies and finding new partners in this, it is just going to increase the conflict, and that is not anything that I have heard from our Joint Chiefs of Staff that they want to see happen, that the Secretaries of Defense have all said that that is the best thing that we can do is to build towards more peace. That will help with their being able to provide security.

Thank you both for your testimony.

And, with that, I will conclude today's hearing. This subcommittee is adjourned. Thank you.

[Answers to submitted questions for the record follow:]

NATIONAL SECURITY AND ENERGY

Question. You have both devoted significant study and effort in your careers to the value and goal of increased energy efficiency across DoD. I come from a state that proudly and effectively utilizes a very diverse range of energy sources: a state with an “all of the above” approach. Oklahoma is a national leader in production of natural gas and oil, but also a top-three producer of wind energy. And Fort Sill, for example, is among the leading Army installations in collection and storage of solar energy. Combined with use of natural gas-powered generators, Fort Sill could sustain critical missions for at least 14 days during a regional grid outage.

Augmenting your points on the importance of mitigating environmental threats and of increased energy efficiency, can you speak to the national security value of energy source diversity and redundancy as we face increasing threats from natural, physical, and cyber events?

Answer. Your question points to the critical importance of energy resilience at military installations. Facing the increasing threats that you cite – from climate impacts such as extreme weather, deliberate physical attacks on our installations, or cyber attacks designed to shut down our energy systems – our installations are working to increase their ability to conduct their missions despite these risks.

Certainly, one way to focus on response to such threats is to deploy a diversity of energy systems in response. The most common energy resilience asset on military installations today is the diesel generator. These systems are not the most reliable assets in our inventories, but they provide an important backup capability that most missions could not forego.

Optimally, however, an installation would have several layers of resilience, from power produced on base, from battery storage, from microgrids that manage that power, and even from diesel generators.

ENERGY SUPPLY PREPAREDNESS

Question. How would you compare the service branches in terms of their relative current capability to withstand threats to energy supply through utilization of increased efficiency, redundant sources, stored capacity, and infrastructure resilience? And the US Department of Defense compared as a whole to its major counterparts internationally?

Answer. Neither the services nor the Department as a whole sufficiently measures its resilience to inform a quantitative answer to this question. The best measure, however, is the practice in recent years of conducting “pull the plug” exercises where the power to an installation is intentionally cut off to examine the ability of back-up systems to respond. Several of these exercises have been conducted already, with many more planned, and they are providing the DoD with critical information on what kinds of resilience investments are most important.

INCREASING RESILENCY

Question. In your study and practice over the years, what steps have you seen or have otherwise been demonstrated to be particularly effective on military installations to harden infrastructure or increase resilience with respect to natural disasters, severe flooding, and other similar threats?

Answer. First, what experience has shown repeatedly is that newer buildings, facilities and utilities infrastructure, built with updated and modern building codes, fare far better in the face of an extreme weather event. While modernizing the entire DoD infrastructure, which would cost more than a trillion dollars, may not be a practical solution, increasing the rate of recapitalization would be. An increase to a commercial benchmark of 2-4 percent reinvestment (including both new construction and facilities sustainment, restoration and modernization) would yield significant dividends.

These investments should be made with an eye toward minimizing vulnerability. For example, the billion-dollar U.S. Strategic Command headquarters at Offutt AFB was built on a higher elevation than those parts of the base that flooded in 2019. The location of the building reduced risk and avoided hundreds of millions of dollars in potential costs.

Second, effective and intentional planning for potential disasters is necessary to optimize response. If an installation is vulnerable to flooding, solutions as simple as sandbag plans may be responsive – but they also indicate understanding of the nature and location of risks that underpin effective response. Responses should be targeted at the vulnerabilities unique to each installation, which are functions of the missions, topography and geography, infrastructure and more. In one place, the best answer might be targeted hardening of infrastructure, while a microgrid could be the best investment in another.

Finally, it is worth highlighting that not all of the best solutions are ones we find in hindsight. New resilience authorities and requirements provided to the Department by Congress will yield even more promising solutions. These might include investments surrounding our installations in green infrastructure to reduce flood impacts, research and evaluation of new climate resilience technologies, or new energy capabilities that leverage distributed energy production, storage and management.

INVESTMENTS IN THE ARCTIC

Question. The geopolitical environment of the Arctic has been substantially affected by the renewal of great power competition between the US, Russia, and China. Russia in recent years has enhanced its military presence and operations in the Arctic while China's growing activities in the region have become a matter of increasing concern. The continued investment by Russia and China in icebreakers, deep-water Arctic ports, and polar airfields threaten to outpace our own capabilities in the Arctic. What types of Arctic investments by the DoD should be prioritized to compete with our adversaries in the region and are our services and servicemembers currently equipped with the appropriate platforms, systems, training, and cold-weather gear to operate long-term in such harsh environments?

Answer. Our investments in the Arctic should be informed by our national security and defense strategies. The interim National Security Strategy from the Biden Administration notes that protecting the American people will require cooperation on climate change risks, and that these risks cannot be separated from other threats facing the United States. Similarly, the recently released National Intelligence Council's Global Trends report highlights that heightened competition is almost certain in the Arctic among the United States, China and Russia as the ice melts and new resources become more accessible there. Specific to the Department of Defense, each of the military Departments has issued strategy documents in recent months that point to the kinds of investments that should be prioritized. These include investments in domain awareness, communications, resilient infrastructure, and better preparation of both people and equipment for Arctic operations.

The effects of climate change are allowing an increase in both commercial and military activity in the Arctic generally, as well increasing the potential for risky gray zone activity by US competitors. These developments do not necessarily mean a change in the Arctic priorities for the United States, but they do increase the urgency to prepare. Near term investments should focus on exercises and training to operate in the region, enhancing communications and surveillance capability, addressing emerging infrastructure vulnerabilities as permafrost thaws and coastal erosion accelerates, enhancing the cold-weather resilience of platforms and people to operate in harsh but increasingly accessible environments, and significant investments in research to better understand the rapidly changing environment.

BALANCING THE PACIFIC AND OTHER REGIONS

Question. It is important to highlight that the impacts of climate change on national security are not confined to the Arctic – climate change poses challenges in other regions of the world that are critical to homeland defense like Africa, South America, and throughout the Pacific. In a globalized world, climate change is a driver of political and regional instability that has significant third- and fourth-order effects throughout the globe. Further, the DoD has officially recognized through strategy and in doctrine that its shift to defense within the Pacific is its top priority. How do you suggest the DoD balances its priorities in the Pacific without neglecting the challenges posed by climate change and increased power competition in the Arctic and beyond?

Answer. These efforts are not mutually exclusive, and the need to balance presence and priorities in different regions of the globe is not unique to climate security.

Within the context of climate change, no region of the world will be unaffected. In the Pacific, which you highlight, nations will be increasingly threatened by sea-level rise (sometimes existentially) and extreme weather. Moreover, we must be sure to incorporate the stresses imposed by climate change when considering the interests and behavior of all stakeholders in the region, to include adversaries and competitors as well as allies and partners.

A key opportunity in the Pacific is to engage our partners in discussions of how climate change impacts their security interests and to promote military-to-military cooperation on building resilience and increasing capacity to respond to extreme weather events. For example, joint exercises with allies and partners focused on humanitarian assistance/disaster relief (HA/DR) activities not only will serve the purpose of building resilience against increased climate impacts but will also strengthen partnerships generally and provide Pacific nations a trusted US partner, particularly as China continues to make overtures to many Pacific nations, in terms of assistance and investment.

ARCTIC COUNCIL

Question. The changing environment of the Arctic has also highlighted the need for changes within the governing body of the Arctic Council. Established in 1996, the Arctic Council is made up of eight Arctic Nations – Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the US. Its original purpose was to provide a forum promoting cooperation and interaction among the Arctic States, Arctic Indigenous peoples, and other Arctic inhabitants on common Arctic issues such as sustainable development and environmental protection. While the Council has been praised as an indispensable forum for regional cooperation, its limits as a governing body have become more evident – perhaps even problematic – particularly regarding addressing and enforcing Arctic-related security issues. How can the Arctic Council better structure itself to provide some mechanism for enforcing its guidelines or recommendations to address military security issues?

Answer. As you note, the Arctic Council has been a valuable forum and an institution that promotes international cooperation. It has never purported to serve a role as a governing body. However, its deliberations have led to three binding legal agreements: on Search & Rescue, Oil Spill Prevention, and Science and Research. In addition, a separate convening – the Arctic Security Forces Roundtable – was created to enhance communication between regional militaries. These organizations serve an important role, but that role is not enforcement, nor do they impose their collective views on the sovereign rights of member nations. Additionally, Russia has been barred from participating in the Arctic Security Forces Roundtable since the conflict in Ukraine began in 2014.

As the Center for Climate and Security stated in its recent report, *Climate Change and Security in the Arctic*, “... military and policy planners are faced with a delicate balancing act between the need for upgrading plans and investments to adjust to a different and more active Arctic, while at the same time avoiding security dilemma dynamics and maintaining the Arctic as a region of low tension. To achieve this balance, an inclusive process to establish a regulatory framework guiding military security in the Arctic would be stabilizing.” The report calls for the creation of a “Military Code of Conduct for the High North” to send a signal that states wish to prioritize cooperation and low tensions in the region.

TUESDAY, MARCH 23, 2021.

FUTURE DEFENSE SPENDING

WITNESSES

**DR. JAMES ACTON, CO-DIRECTOR OF NUCLEAR POLICY PROGRAM
AND JESSICA T. MATHEWS CHAIR, CARNEGIE ENDOWMENT FOR
INTERNATIONAL PEACE**

NILOOFAR RAZI HOWE, SENIOR FELLOW, NEW AMERICA

**MANDY SMITHBERGER, DIRECTOR OF THE CENTER FOR DEFENSE IN-
FORMATION, PROJECT ON GOVERNMENT OVERSIGHT**

**ROGER ZAKHEIM, DIRECTOR, RONALD REAGAN PRESIDENTIAL FOUN-
DATION AND INSTITUTE**

OPENING STATEMENT OF Ms. MCCOLLUM

Ms. MCCOLLUM. This meeting will come to order.

This meeting, as fully virtual, and I am going to go over a couple of the housekeeping matters again.

For today's meeting, the chair or the staff designated by the chair, and that is Kyle, may mute participants' microphones when they are not under recognition for purposes of eliminating background noise. Members are responsible for muting and unmuting themselves. If you notice that you have not unmuted yourself, I will ask you if you would like the staff to unmute. So if you are having problems I will ask you if the staff should unmute you, and you just shake your head, yes, and Kyle will do that.

If there is a technology issue, we will move to the next member until that issue is resolved, but you will retain your balance of time.

And I remind all members and witnesses that the 5-minute clock still applies, and you can see it displayed in the screen. At 1 minute remaining, the clock will turn yellow. At 30 seconds remaining, I will gently tap the gavel, aka, my mouse here working my computer to remind you that your time has almost expired. When your time has expired, the clock will turn red, and I will begin to recognize the next member.

In terms of order of speaking, we will follow the order set forward by the House rules, beginning with the chair and the ranking member, then members present at the time the hearing is called to order, and they will be recognized in order of seniority, and, finally, members not present at the time that the hearing is called to order.

Finally, House rules require me to remind you that we have set up an email list to address which members can send anything they wish to submit in writing to any of our hearings or markups. This email address has been provided in advance to your staff. I would just want to add one more item. The chat function on this Microsoft WebEx, that is the happy face that Kyle was talking about, I dou-

ble-checked it out. So if you are having problems, just click on the happy face there and we will assist you.

So good afternoon, everyone. This subcommittee is holding its third hearing in a series of emerging issue discussions that are going to affect future defense spending. While cybersecurity, nuclear modernization, and overseas contingency operations funding sound like they are three unrelated topics, the common thread that unites them is the significant impact they all have had on our bill the last several years and how they will continue to shape our work for the years to come.

Today, we will hear from three witnesses. Niloofar Howe, senior fellow with a New America will discuss cybersecurity. James Acton, the codirector of the Nuclear Policy Program at the Carnegie Endowment for International Peace will cover nuclear modernization. Mandy Smithberger, the director of the Center for Defense, Information, and the Project on Government Oversight will detail problems and challenges with the OCO spending. And Roger Zakheim, the Washington director of the Ronald Reagan Presidential Foundation and Institute will address broad spending issues.

In the last decade, we have transitioned from thinking of cybersecurity as primarily a function of protecting the Department of Defense information networks to creating a functional cyber integrating cyber effects into most of our missions.

Our adversaries will continue to advance their techniques and capabilities which will force our subcommittee and the whole of government to evolve on the issue of cybersecurity.

Few efforts will have more budgetary impacts than nuclear modernization. Aging systems, such as the Minutemen, *Ohio*-class submarines, the B-1, and B-2 bombers necessitate modernization of the nuclear triad.

In its most recent report projecting the 10-year cost for nuclear forces, the CBO estimated the nuclear enterprise to cost DOD \$326 billion from 2019 to 2028. When these costs are combined with the Department of Energy, the total was 23 percent greater than CBO's previous estimate.

And, finally, the budget control caps and discretionary spending allowed us to have a more conversation about what is going on with the overseas contingency fund. The last 10 years Democratic and Republican administrations in Congress used OCO as a budget gimmick. That is my opinion, but I think it bears out in a lot of the reading that you will see. It was a budget gimmick, and it was used to circumvent the budget control caps.

It is time that we correct those past mistakes. I would like to remind my colleagues that on our fiscal year 2021 House report we stated, and I quote from it, "The OCO experiment has been an abject failure. It has given the Department budgetary relief valve that has allowed it to avoid making difficult decisions." end of quote. And that is part of the—I totally agree with that sentiment.

Our subcommittee will face a of serious difficult decisions in the coming months. And I know our witnesses will provide information that will help us in guiding, making some of those hard choices.

I would now like to recognize our distinguished Ranking Member Mr. Calvert for his comments.

OPENING REMARKS OF MR. CALVERT

Mr. CALVERT. Well thank you, Chairwoman McCollum. First, I would like to thank our esteemed witnesses for appearing before us today as we move closer to receiving the budget request for fiscal year 2022. I hope that is pretty soon. It is important that we take a strategic step back and consider the larger questions. Of course, facing the Department of Defense in both the long-term and short-term environments. As I said in the first hearing on this topic, these hearings happening at a critical time in our Nation's history.

Adversaries like China and Russia continue to challenge the rules-based order that America and our allies have created over the past century. The era of great power competition requires smart, effective resourcing by the Department of Defense, our industry partners, and ultimately this subcommittee.

In our hearing last month, we discussed some of the tough choices we will have to make to ensure that the military mission is aligned and properly funded to take on future threats. This includes divesting legacy systems, restoring critical infrastructure, and improving the way we develop and field new advanced technologies.

We also discussed the adverse impacts that cutting the defense budget would have on our war fighters and our capabilities. I continue to be concerned by the efforts of some in this body to significantly cut the Department of Defense budget.

With our adversaries, particularly China, continuing to close the gap on our capabilities advantage, now is not the time to halt the progress made in rebuilding our military. As just a little statistical fact, the Chinese have just passed us this in a number of ships that are deployed throughout the world.

I look forward to hearing our witnesses to discuss these and other topics here today. I thank you again for the witnesses who are appearing before us today, and I yield back.

Ms. MCCOLLUM. Well, thank you.

To our witnesses, your full testimony will be placed in the record. In the interest of time, I strongly encourage each and every one of you to keep your summarized statements to 5 minutes or less. Be complete but be succinct when we are in a question and answer period.

With that, Ms. Howe, I would like turn it over to you to lead us off.

SUMMARY STATEMENT OF MS. HOWE

Ms. HOWE. Thank you so much, Chairwoman McCollum, Ranking Member Calvert, distinguished committee members, thank you for inviting me to testify on the important topic of cybersecurity. My name is Niloofar Howe, and I have spent close to three decades focused on innovation in the technology and national security in cybersecurity sectors.

Malicious actors operating in cyberspace are fast, creative, persistent, and unconstrained by norms, laws, and regulation. They have proved themselves extraordinary opponents who study our weaknesses and are able to adjust, evolve, and move with the so-

phistication and speed that evades our best defenses and exploits our technical, human, legal and regulatory vulnerabilities.

The SolarWinds supply chain operation by Russia and exploitation of Microsoft Exchange Servers by China are just the latest examples of how sophisticated these adversaries have become, purposefully using U.S. infrastructure to launch devastating attacks against thousands of organizations in a short period of time.

No matter how sophisticated our defense is, no matter how vigilant we are in training and educating, human error, coupled with a complex entangled digital ecosystem will always leave a door open for committed adversaries; a door we need Congress' help to close.

Underpinning all of our struggles is the fact that the internet was constructed in an environment of trust. And that assumption has turned out to be a damaging flaw. Everything we do is increasingly enabled by the internet. And the security of our systems is inversely proportional to the number of nodes, the number of users, and the number of applications it supports.

Over time, almost everything we have experienced in the physical world will happen digitally, but with a speed and severity that we are just starting to comprehend. At the same time, cyber capabilities that enable attacks are becoming commercialized offered as a service by groups that specialize in specific aspects of the chain. Creating a fundamentally asymmetric dynamic for defending against these attacks is increasingly difficult.

Importantly, while there are no silver bullets, there are solutions we can embrace to both deter malicious actors and build resilience to their attacks. I propose 15 in my written testimony. Almost all of them will be familiar to experts in the industry because we have been advocating for them for years. Progress against these solutions requires Congress' support and action, and we need to move fast.

We must turn to the issue of ransomware. Ransomware attacks are rising exponentially as are the accompanying extortion demands. Criminal gangs carry out their ransomware operations with impunity and little fear of retribution and prosecution. Reducing the plague of ransomware should be a national priority and requires us to impose costs on nations, like Russia, that are knowingly harboring and perhaps encouraging these activities.

We must also build resilience by, for example, creating a voluntary cyber civilian corps that can respond to these incidents, especially when they impact resource constraint organizations and municipalities, much as our voluntary firefighters do.

We must reduce supply chain risk. The security of our digital ecosystem is directly correlated to the least secure supplier. SolarWinds revealed that long-term campaigns focused on supply chain vulnerabilities can be very difficult to detect and by extension incredibly productive for the attacker.

SolarWinds is not a unique campaign. We must assume that quiescent malware resides throughout our infrastructure waiting to be stealthily called into action at the right time. To address this issue, we should subject software vendors relied upon by our most critical organizations to risk assessments and a certification process that creates a trusted list of acceptable vendors.

Discovery of SolarWinds was voluntarily disclosed by one of its victim's cybersecurity firm FireEye. Without their voluntary disclosure, Russia would likely still be collecting information from this operation. To this day, we neither know the scope nor the scale of this intrusion as many victims have not come forward with details.

Government agencies and especially the Department of Defense can make real-time breach notification a condition of contracts with penalties for noncompliance. Compelling information sharing is table stakes. Both the Russian and Chinese campaign leverage our intelligence blind spot and legal constraints using U.S. infrastructure for their campaigns. We must raise the bar for adversarial activity on U.S. infrastructure and eliminate that blind spot.

Unless we change our approach, our adversaries will continue to identify vulnerabilities for maximum impact with little to no fear of retaliation. They will continue to advance intrusion tools and trade craft faster than gaps in our cyber defenses can be closed.

As we embrace new waves of technology such as Cloud and its computing, autonomous vehicles, 5G microsenors, AI, low Earth orbit satellites, IoT drones, autonomous weapons, quantum computing, and synthetic Biology, we must reimagine how we organize and defend against the threats each new technology brings with it.

The first few months of 2021 should serve as a wake-up call to take the actions we know we must take, to make the changes we know we must make no matter how difficult the path and do it with the agility, speed, and boldness of our adversaries.

I thank the committee and look forward to your questions.

[The statement of Ms. Howe follows:]

Testimony to the Defense Subcommittee of the House Appropriations Committee**Niloofer Razi Howe****Fellow, International Security Program, New America****March 23, 2021**

Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the Subcommittee, thank you for inviting me to testify today on future challenges in cybersecurity. I am a Fellow in the International Security Program at New America, a D.C.-based non-partisan think tank, and I also serve on a number of corporate and government advisory boards. I have spent close to three decades in the technology sector, with the last 15 years focused on innovation in the national security and cybersecurity sectors. I have been a venture capitalist, an entrepreneur, and a corporate executive in the cybersecurity industry. I have examined cybersecurity issues through a variety of lenses and across multiple disciplines. I hope to put those experiences to use to help develop new approaches and durable solutions to an evolving and complex threat landscape. In this testimony, I hope to lay out the most critical areas of concern and propose options to create resilience to these issues.

Introduction

2021 will go down as one of the most consequential years in cybersecurity and it's only March.

The theft of defense secrets, personally identifiable information, and intellectual property, especially by China and Russia, is a key feature of strategic competition in cyberspace today. The SolarWinds supply chain operation by Russia and exploitation of Microsoft Exchange Servers by China are just the latest examples of how sophisticated these adversaries have become, purposefully using U.S. infrastructure to launch devastating attacks against tens of thousands of organizations in a short period of time. They have proved themselves extraordinary opponents who are able to adjust, evolve, and move with a sophistication and rapidity that evades our best defenses and exploits our technical, human, legal, and regulatory vulnerabilities. Efforts to expose Chinese and Russian malicious cyber operations have done little to diminish the pace or scope of these operations. Cybercrime has also become a profitable industry filled with criminal gangs that operate with impunity in jurisdictions that openly harbor them. Ransomware attacks are rising exponentially, as are the accompanying extortion demands. No organization is too big or too small to be targeted and the incident costs are rising at an accelerating pace.

As we adopt new disruptive technologies at an unprecedented rate, we layer complexity into our interconnected digital landscape, which only increases our vulnerabilities. For example, a [McKinsey](#) report describes today's modern car as a data center on wheels with more than 100 million lines of software code, (four times that of a fighter jet), reflecting the increasing complexity of systems in connected and autonomous cars.

Complexity is the enemy of safety and security.

We live in a software-based world and the best militaries will soon be defined by the best and most agile software developers. Over time, almost everything that we have experienced in the physical world—prosperity, democracy, corruption and warfare—will happen digitally, but with a speed and severity that we are just starting to comprehend. At the same time, cyber capabilities that enable attacks are becoming increasingly commercialized, offered as a service by groups that specialize in specific aspects of the chain, creating a fundamentally asymmetric dynamic where defending against these attacks is increasingly difficult.

While there are no silver bullets, without a concerted effort to both restore deterrence and impose cost on our adversaries while building resilience through improved cyber defenses, this trend will only worsen over time.

I appreciate the opportunity to explore this complex topic and will conclude by proposing a series of actions focused on the twin pillars of restoring deterrence and building resilience in cyberspace.

Let's start with our challenges in cyberspace.

Background: The Russian and Chinese Intrusions

Over the past few months, cybersecurity experts have uncovered Russian and Chinese cyber attacks against a broad set of government and private sector targets. While the full extent of these attacks is not yet known, the scope and scale are massive, with tens of thousands of global victim organizations, ranging from police and fire departments to the federal government, cybersecurity vendors, and even allies like the Norwegian Parliament and the European Banking authority. The initial goal of these attacks was to access sensitive data such as U.S. defense production data, weapons systems designs, trade secrets useful to national and economic security, and, in China's case, any information related to potential political enemies. The ultimate goal remains to be seen. These attacks are just the tip of the iceberg. Undoubtedly there are other cyberattacks taking place right now by these and other adversaries that we are completely unaware of.

The Russian operation, called SolarWinds or Holiday Bear, and the Chinese intrusion targeting Microsoft Exchange servers, show that malicious cyber actors have been able to adjust their tradecraft, tools and techniques, and procedures. They are adapting in order to take advantage of vulnerabilities that exist in our systems and at the entanglements caused by these systems, and are shielded by an ossified regulatory and legal structure that cannot keep pace with the reality of cyberspace and the agility and creativity of those who wish us harm.

Russia, which has historically been a "noisy" player in the cyber arena, seems to have learned from past cyber operations, including Operation Fancy Bear and Cozy Bear (GRU) targeting the DNC, the RNC, Clinton Presidential Campaign, as well as the World Anti-Doping Agency, the U.S. Anti-Doping Agency, a U.S. nuclear facility, the Organization for the Prohibition of Chemical Weapons (OPCW), as well as the Spiez Swiss Chemicals Laboratory. Russia has adapted its cyber strategy to more closely mirror its human espionage strategy, adopting a more patient, disciplined, restrained approach that is focused on gaining maximum access and advantage. The highly effective SolarWinds campaign should shake loose any

vestiges of complacency in appreciating the difficulty in making our organizations resilient to committed adversaries.

China's multi-stage intrusion into Microsoft Exchange servers, which was first detected in January, is now fueling a spate of ransomware attacks against companies unable to keep pace with patching their systems in real-time. This attack seems to indicate that China has no fear of attribution or retribution and is uncharacteristic of its typically controlled posture in cyberspace. Like SolarWinds, China's Microsoft hack takes advantage of widely distributed technology infrastructure, in this case Microsoft Exchange email service. This intrusion enabled unauthorized access to entire email systems of tens of thousands of organizations and follow-on access to connected databases that store sensitive information, intellectual property and trade secrets, as well as personally identifiable information. China's operation first started on January 3, 2021 according to cybersecurity firm Veloxity, which discovered and disclosed the attack on March 2, 2021. While Russia, once discovered, hit the kill switch and has seemingly disabled their access to compromised systems, China has chosen a radically different approach. Rather than disabling its access, China quickly installed backdoors (known as "web shells") on at least 30,000 systems. These backdoors exponentially increase the scale of harm that can be inflicted and can be exploited for second stage attacks, such as ransomware, by all manner of malicious adversaries who have mobilized almost overnight using automation to identify and attack targets that have not yet patched their systems (often despite best efforts). Due to the proliferation of threat actors and the ubiquitous availability of offensive tools that exploit undisclosed vulnerabilities or "0-days", nation-states as well as cybercriminal gangs can mobilize quickly to take advantage of even a rumor of a new vulnerability, as they did in this case.

These intrusions underscore the fact that no matter how sophisticated our defenses, no matter how vigilant we are in training and educating, human error from conventional software development processes, coding vulnerabilities, and not properly maintaining and updating our systems will always leave a door open for committed adversaries, a door we need Congress' help to close. Everything we do is increasingly IP-enabled and the security of our systems and our networks is inversely proportional to the number of nodes, the number of users, and the number of applications it supports. Marc Andreessen, the inventor of the first web browser, famously wrote, "software is eating the world." He may not have appreciated that software is also eating our security.

According to a Microsoft report, as of March 12, approximately 80,000 of Microsoft's 400,000 customers had yet to update their servers, a drop from approximately 100,000 unpatched systems on March 9. During that same time, one cybersecurity firm observed that the number of attempted attacks grew ten-fold from about 700 to over 7,000.

Even when we do move fast, our adversaries move faster.

Our adversaries are bold and perhaps more importantly, they are able to evolve. They study and understand our technical and operational weaknesses and our blind spots and will continue to take advantage where they can to the detriment of our political, economic, and national security. No matter what new defenses we put in place, so long as we remain connected to the Internet, our adversaries will

adapt, adjust, and find new ways to exploit our systems. And they will do it with a rapidity that is breathtaking.

As we examine the evolution of malicious cyber operations over time, from Destover (the 2014 attack against Sony Entertainment) and Crash Override (the 2016 attack against Ukraine's power grid) to NotPetya and SolarWinds, we can see the speed with which our adversaries adjust their tactics, find and exploit weaknesses, and extract valuable information. Soon enough, they will disrupt and destroy infrastructure as they have done to other countries. The damage they can inflict in a short period of time is massive. For example, NotPetya, the 2017 cyber attack that was also attributed to Russia, combined ransomware and wiper software that destroyed data. It invaded corporate networks through a corrupted software update from a small firm in Ukraine and was able to infect thousands of computers globally in just minutes; it ultimately cost businesses \$10 billion in damages. We must respond with equal agility and speed if we are to have a chance to defend our systems, our country, and our people.

Three specific issues that exacerbated issues related to both SolarWinds and Microsoft Exchange are worth deeper examination: (1) the use of U.S. infrastructure by nation-state adversaries, (2) ubiquitous supply chain risk, and (3) lack of information sharing mandate.

The Use of U.S. Infrastructure by Adversaries

One especially troubling aspect of the recent Russian and Chinese operations is the use of U.S. infrastructure (i.e., from U.S.-based servers) as the launching pad for malicious activity. Both the SolarWinds and Microsoft Exchange attacks took full advantage of an intelligence blind spot created by a legal framework that prohibits U.S. intelligence agencies, such as the NSA, from conducting operations inside the United States and legal processes that move too slowly for the FBI to disrupt operations. This is not a new issue. Time and again, our adversaries in cyberspace are able to operate undetected on U.S. infrastructure and the current approach, which relies heavily on voluntary information sharing and incident reporting, is not working.

Both the SolarWinds and the Microsoft attacks show that we have created an unintended "lawless zone" inside the U.S. We should expect our adversaries to take full advantage of this blind spot, which includes disposable infrastructure such as Virtual Private Servers, for their attacks against our government and our companies. We can expect that with full awareness of the legal standards restricting U.S. government access to domestic information and infrastructure, especially for surveillance and law enforcement purposes, our adversaries will continue to launch their operations using our technology infrastructure against us.

Supply Chain Risk

The security of our digital ecosystem is directly correlated to the least secure supplier, customer, vendor in that ecosystem. Russia's SolarWinds attack also reveals that long-term campaigns focused on supply chain vulnerabilities can be very difficult to detect and, by extension, incredibly productive for the attacker, regardless of whether the goal is network attack or espionage. Russia lay dormant for months, perhaps longer, after successfully introducing back doors and stolen keys into various technology

infrastructure companies, testing their code, testing their stealth. The attack was inadvertently discovered by one of the victim companies, cybersecurity firm FireEye, but only after running forensics on thousands of machines and tens of thousands of files. Very few organizations could have dedicated the resources necessary for uncovering the root cause and scope of the compromise in a timely manner. FireEye was able to do it in days.

Lack of Information Sharing

FireEye was under no legal obligation to disclose discovery of the SolarWinds breach, bringing to light another shortcoming of our regulatory framework, which is primarily focused on data privacy and breaches affecting personal information. Voluntary disclosure is a rare thing and often brings with it serious legal liability that most organizations will legitimately shy away from. In this case, without FireEye's voluntary disclosure of the breach and the technical details necessary to defend against it, Russia would likely still be collecting information from this operation.

The Broader Cyber Threat Landscape

Unfortunately, SolarWinds is not a unique campaign. We must assume that quiescent malware resides throughout our infrastructure, throughout the long tail of vendors to our most critical agencies, waiting to be stealthily called into action at the right time. Even if discovered, once activated there is no mandatory disclosure requirement that could serve as an early warning system for other potentially vulnerable organizations.

Securing cyberspace, and by extension, everything that connects to it, is incredibly hard. Underpinning all of our struggles is the fact that the Internet was constructed in an environment of trust, and that assumption has turned out to be an increasingly damaging flaw. When the internet was originally conceived in the mid 20th Century and operationalized in the 1990s, the vision was utopian—universal connectivity and universal interoperability based on the premise of openness. The Internet was also anti-establishment in that it was not subject to national sovereignty nor to nation-state governance—instead it was to be governed by a multi-stakeholder, transnational, stateless, nationless, borderless body based on universal shared principles, standards, norms, and values. Sadly, though not surprisingly, none of these principles, standards, norms, and values are shared by our adversaries.

As the Internet has matured and we have operationalized every aspect of our lives in this domain, we have become personally, economically, politically, and militarily dependent on cyberspace and the threat this dependence represents has grown in kind and in effect. We are witnessing that, from ransomware, Intellectual Property theft, to cybercrime, espionage, and cyber conflict/cyber war, influence campaigns, the rise of misinformation/disinformation, cyberviolence, cyberbullying, and exploitation. The malfeasance that takes place in this domain seems endless.

Global events only add fuel to the fire of cyber attacks. The COVID-19 pandemic caused a dramatic acceleration in digital transformation for all organizations as we pivoted overnight to a work-from-home model. As a result of this pivot, the Internet became the new corporate network and our attack surface

expanded as pandemic related malfeasance took hold in cyberspace, from pandemic related phishing lures and ransomware campaigns to COVID-19 disinformation and vaccine-related IP theft.

While the threat landscape is endless, a few trends are worth focusing on.

Key Trends

The world is changing dramatically with a speed, scope, and scale that we have never experienced, partially fueled by a pandemic that forced every organization to accelerate its digital transformation projects. As we digitize business, economic, defense and social infrastructures, embrace cloud and edge computing, autonomous vehicles, 5G and microsensors, Artificial Intelligence, small low orbit satellites with advanced sensor platforms, the Internet of Things (IoT), drones, distributed ledger technology, augmented and virtual reality, autonomous weapons, quantum computing, and synthetic biology, to name a few, we must reimagine how we organize to defend against the threats each new technology brings with it.

One of the most pervasive and harmful cyber threats to organizations are ransomware attacks, both in terms of the disruption caused and monetary loss inflicted. The cost of these attacks is estimated to be between \$40 billion and \$170 billion globally. By encrypting files and demanding payment, hackers have quickly figured out how to monetize illegal access into networks, increasing the pace and sophistication of their techniques while demanding higher and higher ransoms over time, testing what price the market will bear, all with little fear of retribution or prosecution. Ransomware attacks are particularly pernicious and can fundamentally disrupt a government's ability to deliver critical services to its citizens for prolonged periods of time, as we experienced with attacks against a series of municipalities such as Atlanta, Baltimore, New Orleans, Greenville, and St. Lucie to name a few.

Another threat is the almost nonexistent security features in IoT devices. IoT, powered by 5G networks, is being embraced by businesses to take advantage of the \$11 trillion of economic gain waiting to be realized across the full spectrum of economic activity. Many of these devices are inexpensive and rely on slim profit margins and, with little to no regulation or liability, they generally lack even the most basic security features we have come to expect in our connected devices as manufacturers prioritize time to market and efficiency over security. The result is that most IoT devices have known vulnerabilities and have already become a key component of adversary attack tactics, such as botnets. From real world attacks on Industrial IoT such as the cyberattack on Israel's water system, to a White Hat hackers successful hack of the Tesla Model S, to the novel *Burn-In: A Novel of the Real Robotic Revolution* by Peter Singer and August Cole, which examines 10 real-world IoT hacks that can bring Washington DC to a standstill, the lack of security in IoT devices presents an ever-growing threat to our resilience. As IoT devices proliferate in every corner of society from business-to-business applications in manufacturing, agriculture, healthcare, smart cities, ports, power grids and transportation to consumer applications such as home automation, their vulnerabilities will also proliferate into every aspect of our corporate and personal lives.

The growing market in low earth orbit satellites threatens to form the most ubiquitous surveillance platform ever built with no meaningful regulation to control what they are used for or by whom. Iran, for

example, used **commercial** satellite images to monitor Ain al-Asad Air Base in Iraq as it prepared to launch more than a dozen ballistic missiles at U.S. and coalition forces on January 7, 2020. These platforms can now be easily tasked by government, corporations and individuals at low cost with few regulatory or technical limits. We are fusing the power of increasingly powerful sensors such as satellites, drones, and even robotic dogs and the breathtaking increases in the amount of signal (data) that is being generated by the explosion of IoT devices, together with improvements in artificial intelligence and machine learning. Fueled by the power of edge computing, this extraordinary combination of sensor, signal and intelligence leads us quickly to a world where every square meter of planet earth is under constant surveillance that can be accessed by any government, any corporation, and any individual for any purpose at any time. Space is commercializing. Space is democratizing. Space, powered by AI, is the next cyber battleground.

As more money pours into Artificial Intelligence from governments and technology firms, the ramifications are poised to be immense and by definition beyond what the human brain can comprehend. Like IoT, AI is being rapidly adopted across industry, from finance, manufacturing, pharma and healthcare to applications such as cybersecurity. AI modeling is highly dependent on the integrity of data used in training its systems and protecting that data from compromise, manipulation and poisoning will be critical. We are at the very early stages of developing approaches to detecting and remediating data manipulation and need to invest the resources necessary to ensure we are developing the right resilience and response capabilities for the AI sector. We have time, but should not be complacent.

An emerging threat is the digitization of fragile societies without thought to security ramifications. This trend poses a credible security risk both to those societies and possibly to the broader interconnected world. While 60% of the world's population is already online, many of the people who are now being brought online live in some of the world's most chaotic geographies. While access to the Internet will enable them to access the benefits of the digital economy such as digital finance, virtual education and exchanges, virtual healthcare, as they get connected via the Internet, with few norms to truly govern behavior or those who seek to destabilize and manipulate them, we must be prepared for new forms of malfeasance and exploitation. This is especially true if we are operating without a commitment to global digital literacy. As one example, the rollout of Chinese digital currency is actually the rollout of a new form of ubiquitous economic surveillance.

The threat of influence operations leveraging social media platforms continues unabated. Foreign intelligence services and proxies continue to embrace U.S. social media platforms to spread misinformation and disinformation in ways that undermine U.S. society and interests, including our need for a well-functioning democracy. The growth and reliance on social media in the United States has enabled our adversaries, especially Russia and China, to engage in State-on-Individual activities (manipulation) to exploit vulnerabilities in our society, amplify polarization, radicalize our youth, endanger communities, weaken institutions and undermine any sense of objective truth in society. These activities undermine the Root of Trust necessary for a well-functioning democracy. On Facebook, websites promoting coronavirus conspiracy theories have more than ten times the engagement as public health organizations. An Oxford University study of COVID-related disinformation documented 225 distinct conspiracy theory campaigns, 88% of which used social media as their hub. As recently as last week, WSJ reported that three online publications directed by Russia's intelligence services are spreading

disinformation to undermine confidence in Pfizer and Moderna's COVID-19 vaccines. By definition, polarized societies are ineffective at governance as there is no common ground to build consensus to enact bipartisan policies, laws, and regulations that benefit all of society. As our ability to govern erodes, so does people's faith in the government leaders and their political system. The [2021 Edelman Trust Barometer](#) puts numbers against the "raging infodemic that feeds mistrust" finding that businesses, not government, emerge as the only trusted institution that is viewed as being both competent and ethical. The cost of doing nothing to stop disinformation and misinformation campaigns now outweigh the risk of doing something.

Underpinning all of these issues is the fact that [human beings have obsolete mental models](#) and cognitive biases that perhaps were useful when we lived in caves, surviving attacks from the wild, but do little to help us in the age of technology acceleration or protect us against our increasingly vulnerable digital existence. A human being sits at the intersection of our networks and devices and continues to be the weak link in our security programs and architecture. For example, 91% of all cyber attacks start with a phishing email, which still drives a better response rate than most marketing programs. This human, with flawed mental models, is also responsible for developing the policies, laws, and regulations to protect our people and our businesses from harm. The pace at which we have historically developed societal and government solutions, adapted to new technologies, and built consensus with respect to our most pressing problems is too slow for the age of technology acceleration. It is time to change our perspective and mental model with respect to the timelines we must operate on, the agility with which we take action, and the collaborative model we employ. Our adversaries have.

There are no easy answers, no silver bullets.

While eliminating the threat is almost impossible, at least in the near term, there are actions we can take over time that can restore deterrence and lead to greater resilience—resilience of our systems, resilience of our agencies and organizations, and resilience of our society. Focusing on deterrence and resilience is critical as new waves of technology innovation are adopted at a blindingly fast pace. As the scope, scale and pace of technology innovation increases so does the complexity of our systems and, by extension, the opportunity for malfeasance. We cannot ignore the tremendous economic gains that accrue to early adopters who will not wait for security to launch pilot programs and test new and disruptive technologies but we must develop solutions that enable us to respond rapidly to new threat vectors and new techniques, creating resilience to the vulnerabilities they create.

To do this well and on a timeline that is relevant we must rethink our approach to cybersecurity and cyber defense with a clear understanding and appreciation for the unique role the U.S. government must play in leveling the playing field. The harsh reality is that the issue is not when we suffer attacks but how quickly we can react and recover from these attacks.

A Framework for Solutions

To defend our strategic position in cyberspace requires a willingness to both impose cost on malicious actors by restoring deterrence as well as improving our defensive capabilities by building resilience.

1. Restoring Deterrence

Deterrence is the unique purview of government. Government must do what only the government can do—deter malfeasance in cyberspace, especially by nation-state adversaries, by using our tools of national power against those who are harming us. The private sector cannot defend itself alone against nation-state adversaries and criminals who are agile, persistent, and creative and who operate with no fear of reprisal. Even the strongest walls will eventually succumb to a capable, well-funded adversary if there is no deterrence. In 2018, Peter Singer, a Senior Fellow at New America, wrote about the collapse of cyber-deterrence: “Less generously, these trends have created the opposite of deterrence: incentives. The failure to clearly respond has taught not just Russia and China, but any other would-be attacker, that such operations are relatively no pain on the cost side, and all gain on the benefits side. Until this calculus is altered, the United States should expect to see not just Russia continue to target its citizens and institutions but also other nations and non-state groups looking for similar gains.” His observation is even more true now in the wake of current events. Strong deterrence is the cornerstone of any security framework and the U.S. government must take up this challenge in a decisive and consistent way.

- **Reduce the threat of ransomware by imposing cost on Russia and those harboring these groups.**
The only way to have a meaningful impact on the ransomware industry is to impose significant costs on the nations harboring these criminals and enabling them to commit their crimes with impunity and with no fear of reprisal or prosecution. In a recent interview, a representative from the audacious Russian ransomware-as-a-service hacking group REvil (aka Sodinokibi), bragged, “For me personally, there is no ceiling amount. I just love doing it and making a profit from it. There is never too much money—but there’s always the risk of not enough money.” Asked why he was willing to give the public interview, he replied, “Unusual ideas, new methods, and brand reputation all give good results.” Ransomware has become a plague infecting organizations globally with devastating effect. It has also become an incredibly profitable business model for the criminal gangs, mostly Russian, who carry them out. These gangs are comfortable bragging about their techniques, building brand reputation, and pulling in millions (or perhaps hundreds of millions) of dollars in profits each year. If the SolarWinds campaigns does not expand beyond its current apparent aim of espionage, imposing cost on Russia for this attack may make little doctrinal sense. Imposing cost on Russia, especially with economic tools of national power and policy (sanctions, embargoes, tariffs), for creating a safe harbor for these criminals is, however, justified and in line with global norms. Without a fundamentally different approach to the problem, we can expect to see the number, cost and extortion demands of ransomware attacks continue increasing with no ceiling in sight. Stopping ransomware attacks serves the dual purpose of both reducing the cybersecurity threat landscape, especially for resource-constrained entities like hospitals, schools, and state and local governments, which are often the target of these attacks, but more importantly, allowing our incident responders and security professionals, who are overwhelmed responding to ransomware attacks, to focus on detecting and responding to more sophisticated attacks like the SolarWinds and Microsoft.
- **Develop an offensive strategy aimed at inspiring fear and respect in our adversaries.** Almost a decade ago, CrowdStrike co-founder Dmitri Alperovich said, “We do not have a cyber problem,

we have a China, Russia, Iran, North Korea problem.” The most consequential cyber intrusions of the past few years have been executed by nation-states and developing a coherent framework for deterring and responding to malicious activity by nation states (as well as their proxies) in cyberspace that we apply on a relentlessly consistent basis is critical. We must adjust our legal framework to empower U.S. government agencies to collect the necessary intelligence to detect, attribute and defend against these activities, and do it in a way that does not abrogate civil rights. We must create friction and impose cost on countries that attack us—our people, our companies, our government, our democracy—and do it in a way that is consistent with the U.S. Constitution and the values of our democracy. The standup of USCYBERCOM and the implementation of its defend forward and persistent engagement strategies under General Nakasone is an important and impactful evolution of our strategy, and it should be integrated into a broader framework that includes all tools of national power— economic, military, diplomatic, and cyber. This framework should also include a national cybersecurity strategy that builds up our defensive capabilities with respect to critical infrastructure sectors likely to be on the receiving end of these attacks against the U.S. The creation at the NSC of a strategic cyber position is a critical move toward creating such a strategy.

- **Deter adversarial activity on U.S. infrastructure.** Our adversaries are taking advantage of our laws, regulations, and authorities, including our blind spot on U.S. infrastructure, in designing their cyber operations for competitive strategic advantage in cyberspace. There are a number of actions we can take to address this threat. We can grant new authorities to intelligence agencies and law enforcement agencies so that they can effectively and efficiently carry out their mission against malicious actors operating on U.S. networks with the rapidity that is required to be responsive. Additionally, Congress can support “Know Your Customer” (KYC) requirements similar to the Anti Money-Laundering scheme used by the Financial Services industry including requiring network providers to report suspicious activity to DHS or the FBI. A KYC scheme would raise the bar on adversarial activity removing the shield of anonymity in these operations, especially with respect to the use of disposable infrastructure such as Virtual Private Servers, which can be spun up and spun down faster than law enforcement can keep pace today.
- **Continue Building Public-Private Partnership.** If our ultimate goal is defending our nation by defeating our adversaries in cyberspace rather than accommodating them, then, in addition to establishing acceptable norms of behavior, developing and committing to a consistent policy of engagement, escalation and deterrence, we must have a working model for successful public-private collaboration and engagement empowered to move with the agility and rapidity of our adversaries. Defeating our adversaries presupposes our ability to harness the vast technical expertise and resources as well as the unique authorities of the federal government, the vast technical expertise and agility of the private sector, a collaborative intelligence gathering and sharing framework, and coordinated response planning. There have been great examples of effective partnership over the past few years, especially at DoD, including the collaborative efforts by NSA, USCYBERCOM, FBI, CISA and the private sector to protect the 2018 midterm and 2020 Presidential election from foreign interference, the collaborative effort in 2020 by NSA, USCYBERCOM, HHS and private sector to protect vaccine developers from cyber intrusions, DoD’s

CIO delegation of authority to NSA in 2020 to share cyber threat information and cybersecurity guidance directly with the Defense Industrial Base companies and their cybersecurity providers, the standup of NSA's Cybersecurity Directorate in 2019 and its continuous engagement and information exchange with other federal agencies as well as the DIB and private sector on advisories and other guidance regarding adversary activity, threats, and techniques, and CYBERCOM's DREAMPORT initiative in 2018 to enable cyber innovation between the Command and private sector. We have experience showing the meaningful outcomes that these partnerships can drive and must continue building them, reducing barriers (legal, policy, or provincial) to cooperation and operational collaboration. One recently proposed solution is the creation of a National Cyber Response Network (NCRN). Building on the great work done by Cyberspace Solarium Commission Report, the 2021 National Defense Authorization Act (NDAA), and the Aspen Cybersecurity Group, the NY Cyber Task Force recently published a [report](#) emphasizing that the creation of an NCRN can build upon existing public-private partnerships if empowered in advance with appropriate authorities to orchestrate specific response actions for cyber defense during severe cyberattacks.

- **Reclaim our leadership-setting technology standards.** For decades, our nation has played a critical global leadership role, providing vision, diplomacy and stability to further our interests and our allies' interests, and this role is core to the trust and partnership required for a stable society and effective governance at home and around the world. We must do this in the digital world as well. To move us to a world of resilient systems and a resilient society, we must reclaim our technology innovation edge and set the standards for our digital infrastructure, which increasingly underpins every aspect of our existence. We cannot allow our adversaries, especially Russia and China, to set the norms and standards globally for technology, including cyber, at International Government Organizations. The United States must counter with a democratic alternative, working with allies, together producing a deterrent effect with standards that deter malicious activity, reduce the attack surface and promote resilience. We effectively surrendered global leadership of 5G standards to China because we were driven by outmoded assumptions and a misguided unilateral position. We cannot repeat this mistake with future technologies such as AI.

2. Building Resilience

While eliminating the threat is not possible, by continuing to raise defensive capabilities, we can make it harder for our adversaries to run sustained intrusion campaigns and create resilience for our organizations even when they are successful.

- **Reduce our vulnerability to digital supply chain risk and the long tail of suppliers and contractors to our most critical organizations.** Asking every organization to determine for itself whether or not a supplier poses acceptable or unacceptable risk is a recipe for failure. We should institute a program where software vendors relied upon by our most critical organizations and in our most critical sectors are subject to risk assessments (including audits of their software code and development practices) and a certification process that creates a "trusted list" of acceptable vendors. The Cyberspace Solarium Commission recommended the creation of a National

Cybersecurity Certification and Labeling Authority and the European Union recently promulgated regulation requiring Member States to establish, publish, and maintain trusted lists. Given the global nature of technology and supply chains, coordinating a trusted list program with our allies as well as the private sector partners, is foundational to building resilience.

- **Next generation encryption is table stakes.** Sophisticated adversaries are both trying to exploit U.S. encryption while actively pursuing the development of a quantum computer, which can perform calculations exponentially faster than today's computers, potentially enabling them to destroy the encryption algorithms that currently protect our data and, by extension, our systems. Congress should make funding research to develop and deploy next-generation encryption a national priority.
- **Create a mechanism to compel mandatory disclosure and information sharing.** Government agencies, and especially the DoD, can make real time breach notification a condition of contracts with their contractor base, with penalties for noncompliance. Both SolarWinds and Microsoft intrusions underscored the importance of real time breach notification and information sharing by both public and private sector organizations. To this day, we neither know the scope nor scale of these intrusions as some victims have not publicly acknowledged the intrusions and others have disclosed very little. Public-private information sharing and cooperation remains a serious issue with legal liability concerns serving as the biggest deterrent to disclosures and without legislative mandate it is unlikely to become a reality. Understanding that the U.S. government's broad shift to commercial cloud services only introduces new avenues of cyber exploitation and therefore new risk, we must turn into this issue in real time. We must create a mechanism to compel confidential information sharing, including technical details, both by victim organizations as well as the first responders who investigate and restore the systems, and a liability safe harbor for such disclosures.
- **Set minimum Security Standards for IoT.** Congress should enact basic regulation with respect to IoT. The U.S. government can help protect the ecosystem of billions of connected devices by setting basic security standards, requiring features such as auto update, and importantly providing the right incentives, including tax incentives for vendors to implement these standards and corporations (including critical infrastructure) to deploy secure products and the financial headroom and reason to make changes.
- **Create Resilience by Establishing a Cybersecurity Civilian Corps.** While there have been a few enormous ransomware payments over the past few years by large corporations, by and large, the target of ransomware attacks are small and medium sized businesses and government entities that hold valuable information but are under-resourced when it comes to IT and cybersecurity. These organizations often do not have the budget to build specialized security teams, and even if they do, have difficulty recruiting and retaining top talent. As a result of their limited resources, they have limited ability to respond to ransomware attacks in real time. Over two years ago, as a solution to this problem, Natasha Cohen and Peter Singer of New America proposed the creation of a Cybersecurity Civilian Corps modeled after Civil Air Patrol or Volunteer Firefighters. Rather

than competing with the private sector, this model would allow a public service organization that leverages private sector talent in a voluntary capacity, and provides the opportunity to serve the nation against a real national security threat. Much like volunteer firefighters, these volunteers could receive tax credits and training in return for their service, saving state and local governments hundreds of millions of dollars in expense. Such a program could draw on and be a training partner for local educational institutions, addressing the adjacent challenge of recruiting more people into the cybersecurity industry, with outreach programs such as clinics and competitions at local junior high and high schools, supplementing any existing programs. The Homeland Security Act of 2002 envisioned but did not follow through with the creation of a National Emergency Tech Guard program, a corps of volunteers whose training is funded by the government and who can be deployed during periods of crisis to restore critical systems and services to their communities. This idea may not be new, but the timing is right for Congress to support this type of program.

- **Future forecasting for resilience.** There is no unifying governmental organization tasked with looking "over the ridgeline" to assess future cyber vulnerabilities and their relative risk. There are many governmental and commercial organizations that perform aspects of this vital role, but they are disconnected from each other and overwhelmed with current priorities. For relatively low cost and little organizational friction, the U.S. government could task a single organization, perhaps a qualified University operating as an FFRDC, with the responsibility of focusing on future vulnerabilities in order to enable more forward leaning and effective planning for resilience. The CERT Coordination Center, which focuses on current attacks and vulnerabilities, is an FFRDC partnership between the U.S. government and Carnegie Mellon University. CERT is an ideal model to mirror for a clearinghouse organization, with no operational responsibilities, that can consolidate a global view of future threats that we have yet to completely imagine or defend against.
- **Leverage Private Sector Expertise.** The private sector has developed deep technical expertise in certain domains and the U.S. government must leverage the private sector better and not duplicate effort in areas where private sector capabilities now surpass government capabilities. In the threat intelligence market, while U.S. intelligence agencies can bring the full power of their capabilities to bear on a selected basis producing unique insights into foreign adversaries, the private sector has advanced capabilities across a broad group of actors (foreign and domestic), including insight into attacker behavior, tactics techniques and procedures (TTPs), and campaigns. Coordinating intelligence between the private and public sector to understand adversary behavior and create a coordinated response to defend and defeat the adversary is critical. As we build and invest in government capabilities, we must be careful not to duplicate or compete with private sector capabilities.
- **Empower Digital Citizenship.** "Misinformation is a long-term problem that demands long-term, sustainable solutions as well as short-term interventions," [write](#) Kristin Lord and Katya Vogt in Stanford Social Innovation Review. We live in a polarized, hyperconnected world of impatient digital citizens who are being continuously and creatively targeted with misinformation and

disinformation. This human-centered problem requires human-centered solutions. Developing and funding media literacy programs that teach individuals how to discern the difference between fact, opinion, misdirection and lies, is critical to a well-functioning society and should be a national priority. IREX, a global development and education nonprofit organization¹, developed a Learn to Discern education program for the Ukrainian Ministry of Education to combat Russian disinformation campaigns. Their program integrated information consumption skills into existing secondary school curricula and teacher training programs at pre- and in-service teacher training institutes. Working with the non-profit community as well as the private sector, the U.S. government should fund the development of similar programs and curricula in the U.S. for our elementary, middle and high school students as well as for teacher training. With a broad digital literacy campaign, we can build resilience to state-sponsored disinformation campaigns, help individuals recognize divisive narratives, and improve our youth's ability to navigate increasingly polluted online spaces in a safe and responsible way. As we do this, we must pay close attention to misinformation innovations such as deep fakes, which present a unique challenge, and fund research aimed at identifying and mitigating the threat they pose to the very concept of objective truth. Support of research that can create an antivirus approach to deepfakes by focusing on their rapid debunking and attribution, coupled with requiring platform companies to require watermark on any known deepfakes are two potential strategies for reducing the possibility that deepfakes can be weaponized.

- **Organize USG to succeed.** From an organizational perspective, the U.S. government continues to be misaligned with today's cyber threat environment. There is a massive authority/capability mismatch with respect to the agencies most relevant to cybersecurity: DHS/CISA, NSA, FBI as well as Sector Specific Agencies, such as Treasury and Energy, which have deep expertise in their respective domains. We do not have time for provincialism or for aspirational thinking. As we define clear swimlanes for each of these agencies, we must remain realistic and clear-eyed about the capabilities that exist today, the leadership, timeline, and talent it would take to transform/upskill those capabilities, and, in the meantime, develop a plan to leverage talent as necessary from the agencies that have the qualified professionals to defend our nation in cyberspace. Make no mistake, enemies are currently exploiting this deficit to our increasing detriment. The move to agile has created tremendous benefits in software development by enabling a culture of rapid continuous delivery of software, responsive to changing circumstances and customer needs. A similar mindset shift in how the U.S. government operates and organizes in cyberspace in order to react, adapt and respond to real-time issues is a critical strategic imperative.
- **Cybersecurity and STEM Education.** Our fundamental challenges in cybersecurity will only increase over time if we cannot fill the talent to build the capabilities and design the policies we need to compete. All of society must focus on developing education programs to skill, reskill, and upskill individuals from all backgrounds into our industry regardless of their education level. In addition, to solve our most technical problems, including next generation encryption and

¹ I serve on the Board of Directors of IREX.

quantum computing, we must inspire the next generation of students to embrace STEM careers. NSA's partnership with the National Science Foundation and ODNI provides a great model for an effective K-12 cyber outreach program. This program, known as GenCyber, which promotes cybersecurity education through summer camps for both students and teachers, with an emphasis on recruiting and retaining underrepresented groups in cybersecurity, started with eight camps in six states and has grown to 122 camps in 34 states reaching 5,000 students annually, 45% of whom are minorities. The National Centers of Academic Excellence in Cybersecurity program, also run by NSA in partnership with CISA and the FBI, supports 330 institutions and produces over 20,000 diverse graduates per year. The prototypes already exist for increasing STEM engagement at all stages of education with diversity and inclusion goals. With Congress' support, model programs like these can be rolled out more broadly across the country.

Conclusion

The growing challenges faced by the U.S. in cyberspace are at their core national security challenges that require a fundamentally different, more agile, more collaborative approach. Time is not on our side nor are we fully rising to the challenge. The recommendations outlined above are intended to support empowering a democratic society that is resilient enough to respond to the unintended consequences of technology innovation and the inevitable exploitation and use of those technologies by adversaries. These recommendations, and the many like them made over the decades by my colleagues, experts, working alone or as a part of commissions, task forces and working groups, can be the starting point of what will be a long and difficult journey toward cyber resilience.

Our adversaries are fast, creative, persistent, and unconstrained by law or regulation. Unless we change our approach, they will continue to identify vulnerabilities in software used across varied networks for maximum impact with little to no fear of retaliation. They will continue to advance intrusion tools and tradecraft faster than gaps in cyber defenses can be closed. They will continue to use common anonymization platforms, open source capabilities, generalized toolkits, and leverage inherent functionality built into operating systems to obfuscate their activity and make attribution difficult. They will continue to leverage our laws and regulations to enable their operations for maximum effect.

These first few months of 2021 should serve as a wakeup call to take the actions we know we must take, make the changes we know we must make, no matter how difficult the path, and do it with the agility, rapidity, and boldness of our adversaries. The clock is ticking. We are running out of time.

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In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 03/23/2021

Hearing Title :

Future Defense Spending

Witness Name: Niloofer Razi Howe

Position/Title: Fellow, International Security Program, New America

Witness Type: ☐ Governmental ☒ Non-governmental

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Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

- ☐ I have attached a written statement of proposed testimony.
- ☒ I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include— (i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

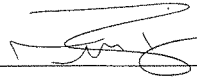
(C) The disclosure referred to in subdivision (B)(ii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

Appropriations
03/23/2—Future Defense Spending

False Statements Certification

Knowingly providing material false information to this committee/subcommittee, or knowingly concealing material information from this committee/subcommittee, is a crime (18 U.S.C. § 1001). This form will be made part of the hearing record.



Witness signature

03/17/2021

Date



NILOOFAR RAZI HOWE

Niloofar Razi Howe has been an investor, executive and entrepreneur in the technology industry for the past 25 years, with a focus on Cybersecurity for the past 15. Ms. Howe is a Senior Operating Partner at Energy Impact Partners, a VC fund investing in companies shaping the energy landscape of the future. She also serves on the Board of Directors of Morgan Stanley Private Bank, NA and Morgan Stanley

Bank, NA, Pondurance (as Executive Chair), Recorded Future, Swimlane, Tamr, and on the Board of Advisors of Dragos, Enveil, RangeForce, and Picnic Threat. She is a life member at the Council on Foreign Relations and a Fellow, International Security Initiative at New America, a nonprofit, nonpartisan think tank. Her non-profit work includes serving on the board of IREX, an international development and education organization working in over 120 countries focused on promoting social justice and lasting change, as Chair and as a Member of the Board of Trustees of the Smithsonian National Museum of Asian Art.

Previously, Ms. Howe served as Chief Strategy Officer and SVP of Strategy and Operations at RSA, a global cybersecurity company where she led corporate strategy, corporate development and planning, business development, global program management, business operations, security operations and Federal business development. Prior to RSA, Ms. Howe served as the Chief Strategy Officer of Endgame, Inc., a leading enterprise software security company, where she was responsible for driving market and product strategy, as well as leading marketing, product management, corporate development and planning. Prior to her operating roles, Ms. Howe spent twelve years leading deal teams in private equity and venture capital; first as a Principal at Zone Ventures, an early-stage venture capital firm in Los Angeles, and then as Managing Director at Paladin Capital Group, a Washington DC based private equity fund focused on investing in next generation security companies. Ms. Howe started her professional career as a lawyer with O'Melveny & Myers and as a consultant with McKinsey & Co.

Ms. Howe's previous board roles include serving on the Board Directors of Initiate Systems (acquired by IBM), Courion Corporation (acquired by K1 Investment), Command Information (acquired by Salient), Safeview (acquired by L-3), Neven Vision (acquired by Google), Global Rights, an international human rights organization, as Chair, Sibley Memorial Hospital (a member of Johns Hopkins Medicine), as chair of its Investment Committee, and Sibley Memorial Hospital Foundation, as Vice Chair. Ms. Howe graduated with honors from Columbia College and holds a JD cum laude from Harvard Law School.

Ms. Howe speaks regularly on national security, cybersecurity, technology, innovation, corporate governance and corporate culture. She also created a TEDx talk entitled "The Gift of Exile" about the long-term opportunities that can arise from the most difficult challenges encountered in childhood for both the individuals who suffer the adversity and the communities that can accept and integrate such individuals. She is a regular judge at innovation competitions including the RSA Conference Innovation Sandbox Competition, the RSA Conference Launchpad Competition, and SINET16 Innovation Competition.

Ms. MCCOLLUM. Well, thank you. And you packed a lot into your time. Thank you so much.

Dr. Acton, we are anxious to hear from you.

SUMMARY STATEMENT OF DR. ACTON

Mr. ACTON. Well, thank you, Madam Chairwoman, and I should say, it is both a professional honor but also a personal honor to testify before you today. As it happens, my wife was in Congress on the Lowey staff for many years, including when she chaired the Appropriations Committee. So, it has been well-drilled into me that in Congress there are Democrats, Republicans, and appropriators.

As you flagged in your opening remarks, Madam Chairwoman, the United States currently stands at the beginning of a major modernization weight. Almost every American nuclear delivery system, missile, warhead, and command and control asset will require some kind of modernization over the next 10 to 20 years. Through the momentous (ph) program, the Congressional Budget Office estimates that annual spending on U.S. nuclear forces will rise from about \$34 billion in 2019 to about \$63 billion in 2028 before peaking in the mid-2030s.

Now, some of this increase is inevitable and appropriate. But I believe that the spending growth could be curtailed without compromising U.S. or allied security, providing that funds are allocated effectively. To this end, today, I would like to highlight two programs that I believe are extraneous, and one that I believe is actually underfunded.

First, the United States is set to spend approximately \$95 billion on procuring the ground-based strategic deterrent, a fleet of new intercontinental ballistic missiles. The Department of Defense argues that ICBMs are needed because of the quote, "intractable targeting program" unquote that they present to Russia. This problem would be the same, however, whether or not we acquire new ICBMs.

The feasibility of extending existing Minutemen III ICBMs should be examined, therefore. DOD previously rejected this option in a 2015 study. As I discuss in my written testimony, I believe the assumptions behind this study were flawed. The fact that the cost of GBSD has risen by almost 50 percent in the last 6 years suggests that the study's conclusions may be flawed too.

I suggest, therefore, that Congress pulls the GBSD program by reducing fiscal year 2022 funding to the lowest level consistent with preserving the program in its current state, pending a full assessment by an independent commission of the feasibility and cost of extending the service lives of Minutemen III ICBMs.

Second, the United States should retain some low-yield nuclear warheads. Indeed, we are currently modernizing relevant capabilities. In addition, the Trump administration initiated the development of a new \$9 billion sea-launched cruise missile with a lower-yield option. Given plans to modernize the nuclear armed cruise missile however I believe that this new sea-launched cruise missile is redundant. The air-launch cruise missile carried by stealthy B-21 bombers should be highly survivable before launch. And after launch, the two missiles would have essentially identical flight pro-

files. For this reason, I believe that Congress should refuse any further funding for the nuclear arms Sea Launch Cruise Missile.

Third, the United States would be literally unable to conduct any kinds of nuclear operations without a functional nuclear command and control system. The development of a highly resilient nuclear command and control system should, therefore, be the single highest priority to nuclear modernization. Unfortunately, it is not. A major and unappreciated challenge is that most command and control assets support both nuclear and nonnuclear operations.

In a conventional conflict, therefore, a U.S. adversary might attack these assets in order to undermine our known nonnuclear operations. So, to tax, however, would have the effect of degrading our nuclear command and control capabilities, producing potentially catastrophic escalation risks.

I believe that the Department of Defense has not factored this kind of risk into planning for the future nuclear command and control architecture. And, indeed, the new generation of U.S. early warning satellites will actually have fewer satellites in them than the current generation potentially reducing their redundancy.

In response to this and other growing threats, I respectfully suggest that Congress should increase funding to nuclear command and control modernization and require the Department of Defense to study fundamentally different and more resilient architectures.

I hope these suggestions are helpful, and I very much look forward to your questions. Thank you for the time.

[The statement of Mr. Acton follows:]



CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

Congressional Testimony

**Future Defense Spending:
Nuclear Modernization**

James M. Acton

Jessica T. Mathews Chair and
Co-Director, Nuclear Policy Program
Carnegie Endowment for International Peace

Testimony before the House of Representatives
Appropriations Committee, Subcommittee on
Defense

March 23, 2021

Nuclear weapons appear to help deter nuclear aggression and prevent large-scale conventional conflict in a small number of high-consequence contingencies. Ensuring the efficacy of nuclear deterrence, therefore, is in the national security interests of the United States and its allies—so too are cooperative efforts to reduce the risks of escalation and arms racing and to create the political and security conditions under which nuclear weapons could be safely eliminated. For appropriators, the most salient nuclear policy questions are those with financial implications—in particular, how should the United States maintain and modernize its nuclear forces and their supporting infrastructure?

The coming wave

Today, the United States deploys a triad of strategic delivery systems (“strategic” is a Cold War term that refers to weapons with sufficient range to reach Russia from their deployment locations):

- Ohio-class ballistic missile submarines (SSBNs) armed with Trident II sea-launched ballistic missiles (SLBMs). These missiles can accommodate three different warheads (the W88, W76-1, and the lower-yield W76-2).
- Silo-based Minuteman III intercontinental ballistic missiles (ICBMs), which can be armed with two different warheads (the W78 and W87).
- Two nuclear-capable bombers: B-2 aircraft, which can carry three different types of gravity bombs (the B61-7, B61-11 and B-83), and B-52H aircraft, which can carry the Air-Launched Cruise Missile armed with the W80-1 warhead.

The United States also retains two types of nonstrategic gravity bombs (the B61-3 and B61-4), which can be delivered by F-15E and F-16 aircraft. An extensive command-and-control system—the vital importance of which is often overlooked—enables nuclear operations. A large number of facilities (including some of the U.S. national laboratories) support the production, maintenance, and disassembly of warheads.

Over time, these submarines, aircraft, missiles, warheads, and enabling capabilities will, like all military systems, age and require some form of modernization—whether life extension or replacement. From a budgetary perspective, it would be best if a few modernization programs were underway at any given time so that total expenditure on U.S. nuclear forces remained roughly constant. In practice, the United States has taken a very different path. Today’s nuclear forces were, for the most part, designed and built during one of two previous modernization “waves:” one in the late 1950s and early 1960s, and another in the late 1970s and early 1980s.

The United States is now facing a third major modernization wave. Almost every U.S. nuclear delivery system, missile, and warhead will require some kind of modernization over the next 10 to 20 years. Key elements of the nuclear command-and-control system and nuclear warhead infrastructure will too. (Exceptions, such as W76 warheads, are primarily systems for which life extension programs have recently been completed.) In addition, the administration of President Trump decided to begin work on the development of a new high-yield SLBM warhead, the W93, and a new nuclear-armed sea-launched cruise missile (SLCM) with a low-yield option. It also sought to significantly expand the production of plutonium pits for nuclear weapons at two sites.

If this entire set of programs is pursued, the result will be significant increases in expenditure on nuclear forces. In its most recent ten-year analysis, the Congressional Budget Office (CBO) estimated that annual spending on U.S. nuclear forces (which includes operations and maintenance as well as modernization) would rise from \$33.6 billion in 2019 (the year of publication) to about \$63 billion in 2028—or from about 5% to 7% of the defense budget.¹ Total expenditure during this period is expected to reach almost \$500 billion—about two-thirds of which will be borne by the Department of Defense (and the remainder by the Department of Energy).

Peak expenditure on nuclear weapons, however, is not expected until later. In its most recent 30-year assessment, from 2017, CBO estimated that spending on nuclear forces would peak at about \$50 billion in the mid-2030s and that total spending over 30 years would amount to \$1.2

¹ Congressional Budget Office, “Projected Costs of U.S. Nuclear Forces, 2019 to 2028,” January 2019, 4, <https://www.cbo.gov/system/files/2019-01/54914-NuclearForces.pdf>

trillion.² Because of cost growth and additional programs created in the four years since this estimate was published, actual expenditure is likely to be significantly higher—though peak spending will still occur at roughly the same time.

This “bow wave” of expenditure—or “spending cliff” in appropriations-speak—should prompt Congress to ask three questions:

- First, is every proposed modernization program necessary to ensure the security of the United States and its allies?
- Second, can necessary spending be spread over a longer time period, once again in ways that do not compromise the security of the United States and its allies?
- Third, is spending on nuclear weapons—of whatever amount—being allocated in the most effective way?

If some programs will fail to reach fruition—as I believe is likely—then it is cheaper to abandon or alter them now.

To this end, I argue that Congress should deny funding for a new nuclear-armed SLCM and pause the Ground-Based Strategic Deterrent program (which aims to develop a new ICBM) pending a comprehensive review. Conversely, even after modernization, the U.S. nuclear command-and-control system may lack resiliency. I suggest, therefore, that Congress *increase* funding for command-and-control modernization efforts.

The Appropriations Committee should also address the rapid projected cost growth in the activities of the National Nuclear Security Administration, which is responsible for nuclear warheads and their production infrastructure. Indeed, on March 3, 2020, VADM Wolfe, director of the Navy’s Strategic Systems Programs, warned the House Armed Services Committee about “the pervasive and overwhelming risk carried within the nuclear enterprise as refurbishment programs face capacity, funding, and schedule challenges.”³ To address help this problem, I believe that Congress should cease funding for the W93 warhead and scale back plans for the

² Congressional Budget Office, “Approaches for Managing the Costs of U.S. Nuclear Forces, 2017 to 2046,” October 2017, 3, <https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53211-nuclearforces.pdf>.

³ Johnny Wolfe, Testimony before the House Armed Services Committee, Subcommittee on Strategic Forces, March 3, 2020, 7, <https://www.congress.gov/116/meeting/house/110593/witnesses/HHRG-116-AS29-Wstate-WolfeJ-20200303.pdf>.

production of plutonium pits. Since these activities are largely appropriated through the Energy and Water Subcommittee, I won't discuss them further here except to note that the Defense Subcommittee is responsible for funding the W93 aeroshell and, more importantly, that delays in warhead programs will impact the costs of delivery system programs.

Ground-Based Strategic Deterrent

The United States currently deploys 400 silo-based Minuteman III ICBMs, each of which is loaded with one nuclear warhead. The requirements for the Ground-Based Strategic Deterrent (GBSD) program include the acquisition a new ICBM that will remain in service until at least 2075 and the deployment of 400 of them by 2036. The Air Force and the Office of Cost Assessment and Program Evaluation jointly estimate the total cost of procuring the new missiles to be between \$93.1 billion and \$95.8 billion (including the impact of inflation).⁴ This program appears to be the single most expensive nuclear delivery-system modernization program other than the building of Columbia-class SSBNs, the importance of which I do not question.⁵

The Department of Defense has explained the need for ICBMs primarily in terms of the “intractable targeting problem” that they present to U.S. adversaries (which really means Russia, the only state with sufficient nuclear forces to even consider trying to eliminate the United States’ ICBM force).⁶ Three characteristics of ICBMs are argued to be relevant here. First, because U.S. ICBMs are currently loaded with one warhead and Russia would probably attack each silo with two, Russian strikes would likely consume more warheads than they destroyed. Second, in the event of a Russian attack, U.S. ICBMs could be launched very rapidly, potentially before any incoming warheads detonated. Third, the death and destruction that would be caused by 800 high-yield Russian nuclear warheads detonating over 400 U.S. silos spread over five states is

⁴ Anthony Capaccio, “U.S. ICBM to Replace 1970s Minuteman May Cost \$111 Billion,” October 1, 2020, <https://www.bloomberg.com/news/articles/2020-10-01/pentagon-s-next-generation-icbm-program-may-cost-111-billion>. These figures include the costs of upgrades to silos and command-and-control equipment but not warheads.

⁵ The cost of the B-21 program is similar to GBSD, but that aircraft will be used for nonnuclear missions too.

⁶ Charles A. Richard, Testimony before the Senate Armed Services Committee, February 13, 2020, 9, https://www.armed-services.senate.gov/imo/media/doc/Richard_02-13-20.pdf.

viewed as a feature—not a bug—because Russian leaders would have to assume that their strike would induce the United States to retaliate on a massive scale.

I take issue with some of these arguments (in particular, I believe the United States should seek to build a sufficiently resilient nuclear command-and-control system that it could abandon the perceived need to retain the option of launching ICBMs under attack). Overall, however, for reasons of strategy and domestic and international politics, it would be unwise to scrap the ICBM force at the current time without reciprocal reductions by Russia. Perhaps most importantly, ICBMs provide a degree of redundancy should technological developments threaten the survivability of SSBNs.

Given the Department of Defense's justification for retaining ICBMs, however, the feasibility of extending the service life of the Minuteman III force should be re-examined. Even if one postulates that Minuteman III missiles would perform somewhat less effectively than their prospective replacements at conducting offensive strikes, there is no reason why they would be any less effective as a so-called warhead sponge.⁷ GBSD and Minuteman III would present Russian leaders with an identical "intractable target problem."

While there is value to retaining ICBMs as a hedge in case SSBNs becomes vulnerable, it is significantly more likely that technological developments will undermine the survivability of silo-based ICBMs. In particular, it seems possible—probable perhaps—that, over the next few decades, China and Russia will develop and deploy large forces of *nonnuclear* missiles capable of destroying U.S. silos.⁷ This development would significantly devalue silo-based ICBMs and cause future Congresses, as well as the American people, to look back with incomprehension at the decision to pursue GBSD.

Various Department of Defense officials have stated that further extending the life of the Minuteman III force is either uneconomic or impossible.⁸ They typically point to the results of the

⁷ In theory, the United States could threaten to launch ICBMs on warning of an incoming nonnuclear attack. In practice, such a threat would lack credibility because launching up to 400 high-yield ICBMs in response to precise nonnuclear attacks that could cause very few casualties would be utterly disproportionate.

⁸ For a detailed critique of this argument, see George Perkovich and Pranay Vaddi, *Proportionate Deterrence: A Model Nuclear Posture Review* (Washington, DC: Carnegie Endowment for International Peace, 2021), Appendix A, https://carnegieendowment.org/files/Perkovich_Vaddi_NPR_full.pdf.

Department of Defense's analysis of alternatives, which concluded in 2015. This study was reportedly framed around a requirement for the United States to maintain 450 deployed ICBMs until 2075.⁹ Moreover, it considered only three options in depth: life extension of Minuteman III until 2075 and two different kinds of near-term replacements. Procurement of its preferred option—now known as GBSD—was projected to cost \$62.3 billion.

The estimated cost of this program has risen by almost 50% in less than six years, even as the requirement for deployed ICBMs has dropped from 450 to 400. This fact alone should raise questions about the validity of the 2015 study's conclusions. Moreover, that study's assumptions were problematic. For one, it failed to examine the option of procuring a new ICBM for deployment in, say, 2055, after a medium-term life extension of Minuteman III. It also failed to consider the option of fielding fewer ICBMs. Reducing the size of the Minuteman III force could enable it to remain viable for longer, not least by making additional missiles available for testing.¹⁰ (If needed, a larger number of warheads could be deployed on submarines to compensate). Indeed, a 2014 RAND study commissioned by the Air Force endorsed this approach in concluding that extending the service lives of Minuteman III missiles was feasible.¹¹

Ultimately, I believe that it is high time for this question to be settled by an independent commission of authoritative technical experts who hold the appropriate security clearances. This approach would provide Congress and the executive branch with a credible basis for deciding between GBSD and a Minuteman III life extension program.

Moreover, if life extension is feasible and cost effective, it would, as George Perkovich and Pranay Vaddi have argued, buy time for negotiations with Russia over reciprocal reductions in—or perhaps even the elimination of—silo-based ICBMs entirely.¹² If such negotiations were successful, the cost of a new ICBM program could be reduced significantly or perhaps totally

⁹ Kingston Reif, "Air Force Drafts Plan for Follow-On ICBM," *Arms Control Today*, July 8, 2015, <https://www.armscontrol.org/act/2015-07/news/air-force-drafts-plan-follow-icbm>.

¹⁰ Steve Fetter and Kingston Reif, "A Cheaper Nuclear Sponge," *War on the Rocks*, October 18, 2019, <https://warontherocks.com/2019/10/a-cheaper-nuclear-sponge/>.

¹¹ Lauren Caston et al., *The Future of the U.S. Intercontinental Ballistic Missile Force* (Santa Monica, CA: RAND Corporation, 2014), https://www.rand.org/content/dam/rand/pubs/monographs/MG1200/MG1210/RAND_MG1210.pdf.

¹² Perkovich and Vaddi, *Proportionate Deterrence*, 68. China is not relevant here. Because U.S. ICBMs would need to overfly Russia to reach targets in China, they are unsuitable for conducting strikes against China.

eliminated. (Indeed, in general, arms control offers a pathway to constrain spending on U.S. nuclear forces in a way that actually enhances U.S. and allied security.)

Congress should pause the GBSD program by reducing FY 2022 funding to the lowest level consistent with preserving the program in its current state, pending a full assessment of the feasibility and costs of extending the service lives of Minuteman III ICBMs beyond 2035. This study, which should be conducted by an independent commission, should examine a broad range of options, including the fielding of a new ICBM in 2045, 2055, 2065, and 2075, and possible reductions in the size of the Minuteman III force in the intervening period.

Lower-yield warheads

The United States should retain some lower-yield nuclear warheads. I prefer the term “lower-yield” to “low-yield” because while an explosive power of, say, 5,000 tons of TNT is small by nuclear standards, it is still enormous by conventional standards. As a point of comparison, the huge August 2020 explosion in Beirut was estimated to have a yield of between 500 and 1,110 tons.¹³

I am far from sanguine about the feasibility of two nuclear-armed states’ fighting a limited nuclear war (though, fortunately, it has never been tried). The danger it would escalate into apocalyptic slaughter would be very real. But if a U.S. adversary were to engage in limited nuclear use, the United States should want the option to respond proportionately and preserve at least some chance of avoiding a civilization-ending catastrophe.

The Air-Launched Cruise Missile and various deployed gravity bombs currently have lower-yield options. These capabilities will be retained for the indefinite future in the form of a life-extended gravity bomb, the B61-12, and a new air-launched cruise missile, the Long-Range Standoff Weapon (LRSO) armed with the W80-4 warhead. Additionally, the Trump administration deployed some lower-yield W76-2 warheads on Trident II SLBMs. I find it difficult to conceive of any circumstances in which U.S. interests would be better served by the

¹³ S. E. Rigby et al., “Preliminary Yield Estimation of the 2020 Beirut Explosion Using Video Footage from Social Media,” *Shock Waves* 30 (2020): 671-675.

use of a W76-2 warhead rather than one of the alternatives—but since the budgetary implications of retaining the W76-2 are insignificant, I won't attempt to proselytize any further here.

The Trump administration also began early work on the development of a new nuclear-armed SLCM with a lower-yield option. CBO estimates that this program will cost about \$9 billion between 2019 and 2028 (although it cautions that this estimate is “very uncertain.”)¹⁴ The United States made the decision to dismantle its previous nuclear-armed SLCM as part of the 2010 Nuclear Posture Review. Since then, there have been no plans to deploy nuclear weapons of any kind on attack submarines or surface ships. As a result, deployment of a new nuclear-armed SLCM would likely have to be accompanied by additional expenditure on new command-and-control capabilities.

A new nuclear-armed SLCM would be redundant. The United States is expected to spend roughly \$100 billion on procuring a new fleet of stealthy B-21 aircraft and upwards of \$20 billion on acquiring LRSO and modernized warheads.¹⁵ The combination of these two weapon systems will likely be particularly survivable because the LRSO's range should enable B-21 aircraft to operate from areas where an adversary's air defenses are weak or even nonexistent. As a result, I believe that there is little reason to question the survivability of B-21s carrying LRSOs, at least in the near- to medium-term. (In fact, if the Department of Defense has such concerns, they would call in question the entire B-21 program.)

After launch, LRSO and a SLCM would have essentially identical flight profiles. Indeed, CBO assumes that the latter's design “would draw heavily from the design of the LRSO” in order to reduce costs.¹⁶ As a result, if LRSO were unable to penetrate enemy air defenses, there would be every reason to assume that a nuclear-armed SLCM would be similarly unable to do.

Congress should refuse any funding requests to develop a new nuclear-armed SLCM.

¹⁴ Congressional Budget Office, “Projected Costs of U.S. Nuclear Forces, 2019 to 2028,” 4.

¹⁵ Congressional Budget Office, “Approaches for Managing the Costs of U.S. Nuclear Forces, 2017 to 2046,” 53; Kingston Reif, “Air Force Wants 1,000 New Cruise Missiles,” *Arms Control Today*, May 2015, <https://www.armscontrol.org/act/2015-05/news/air-force-wants-1000-new-cruise-missiles>; and U.S. Department of Energy, National Nuclear Security Administration, “Fiscal Year 2021 Stockpile Stewardship and Management Plan—Biennial Plan Summary,” Report to Congress, December 2021, 5-32, https://www.energy.gov/sites/prod/files/2020/12/f82/FY2021_SSMP.pdf.

¹⁶ Congressional Budget Office, “Projected Costs of U.S. Nuclear Forces, 2019 to 2028,” 4.

Nuclear command and control

Because the United States would be literally unable to conduct nuclear operations without the ability to command and control its nuclear forces, the development of a resilient nuclear command-and-control system should be the single highest priority for nuclear modernization—especially because the threat to command-and-control assets is growing as the result of advances in cyber, anti-space, and other nonnuclear weapons. Not only do budget requests suggest that command-and-control is not the top priority, but some design choices could have the unintentional effect of further undermining resilience.

The design of the U.S. nuclear command-and-control system has historically been guided by the manifestly important objective of survivability during a nuclear war. Because it is expensive to develop and build systems that can withstand, for example, an intense electromagnetic pulse, the U.S. nuclear command-and-control system consists of a relatively small number of exquisite assets. For example, the Space-Based Infrared System (SBIRS)—a constellation designed to provide warning of an incoming nuclear attack—comprises just six satellites (though it is supplemented by a few legacy satellites that have exceeded their design lives). As the Air Force has acknowledged, this system has a single-point vulnerability—that is, the loss of just one satellite could leave the system unable to fulfil its mission goals.¹⁷

The problem is that, as the Government Accountability Office notes, most nuclear command-and-control assets are dual-use—that is, they support both nuclear and nonnuclear operations.¹⁸ SBIRS satellites, for example, can cue defenses intended to intercept nonnuclear ballistic missiles. As a result, in a conventional conflict, a U.S. adversary might launch nonnuclear attacks against dual-use command-and-control assets in order to undermine U.S. *non*nuclear operations. Such attacks, however, would have the effect of degrading U.S. nuclear command-

¹⁷ William L. Shelton, “Space and Cyberspace—Foundational Capabilities for the Joint Warfighter and the Nation,” speech at the Air Force Association Air Warfare Symposium, Orlando, FL, February 21, 2014, <http://web.archive.org/web/20141225171206/http://www.afspc.af.mil/library/speeches/speech.asp?id=747>.

¹⁸ Christina Chaplain, “Nuclear Command, Control, and Communications: Update on DOD’s Modernization,” GAO-15-584R, Government Accountability Office, June 15, 2015, 1, <http://www.gao.gov/assets/680/670801.pdf>.

and-control capabilities, producing the risk of potentially catastrophic escalation.¹⁹ Indeed, under existing policy, the United States may use nuclear weapons if an adversary launches nonnuclear attacks on nuclear command-and-control assets.²⁰ The upshot is a growing difficulty of preventing a regional conflict in Europe or East Asia from escalating into a global nuclear war, even if none of the leaders involved sought such escalation.

Some modernization decisions are exacerbating this problem. For example, the replacement for SBIRS, the Next Generation Overhead Persistent Infrared system, will comprise just five satellites—one *fewer* than SBIRS.²¹ Even if the new satellites are somewhat more able to evade anti-satellite weapons than their predecessors, reducing redundancy in this way could still leave the constellation less able to withstand nonnuclear attacks in the kind of high-intensity conventional conflict that could precede a nuclear war.

That said, simply building a few more identical satellites may not be the optimal response. Instead, the Department of Defense should consider some fundamentally different architectures, as either a supplement or an alternative to existing programs. For example, the United States could deploy many small early-warning sensors on a large number of satellites that are primarily used for other purposes. There would be trade-offs involved in deploying this kind of dispersed architecture in place of a smaller number of dedicated satellites; in particular, it would probably increase resilience at the expense of performance. Such trade-offs deserve to be properly evaluated by those with access to the relevant classified information.

Congress should redirect at least some funds saved by ceasing the development of a new nuclear-armed SLCM and from pausing (and potentially ceasing) the GBSD program to nuclear command-and-control modernization. It should require the Department of Defense to use some of these funds to study fundamentally different command-and-control architectures.

¹⁹ James M. Acton, “Escalation Through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War,” *International Security* 43, no. 1 (Summer 2018): 56–99.

²⁰ U.S. Department of Defense, “Nuclear Posture Review,” February 2018, 21, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>.

²¹ Sandra Erwin, “Air Force Reports Progress in Missile Defense Satellite Programs,” *Space News*, June 6, 2019, <https://spacenews.com/air-force-reports-progress-in-missile-defense-satellite-programs/>.

Ideally, this study would be conducted by an independent commission. Congress could use this study to inform funding in future years.

* * *

Given where the United States currently is in its nuclear modernization cycle, significant increases in expenditure on U.S. nuclear forces are both inevitable and appropriate. That said, in my assessment, this growth is unnecessarily large because not all of the proposed programs are necessary now. The result is opportunities for some targeted cost cutting and for the reallocation of resources to critically important efforts to modernize nuclear command-and-control capabilities.

Moreover, the Defense Subcommittee of the Appropriations Committee is one of the few places within the U.S. government where the trade-offs between nuclear and nonnuclear defense programs can be adjudicated. Responsibly reducing spending on nuclear forces can enable more spending on important nonnuclear programs. Conversely, funding nonnuclear programs adequately can enable reductions in nuclear spending. For example, the United States' continued need for some lower-yield nuclear weapons is driven, in large part, by the concern that Russia might use its conventional superiority in the Baltic region to seize NATO territory, rapidly and relatively bloodlessly, and then threaten to use nuclear weapons to try to deter a NATO counter-intervention. Efforts by United States and other NATO members to redress this conventional imbalance would help bypass the whole challenge of negating Russia's nonstrategic nuclear forces.

These issues will confront this committee for the better part of the next two decades. While I do not envy your challenge in managing them, I respectfully suggest that it is better to confront them sooner rather than later.

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 03/23/2021

Hearing Title :

Future Defense Spending

Witness Name: James Acton

Position/Title: Co-director, Nuclear Policy Program and Jessica T. Mathews Chair, Carnegie Endowment for International Peace

Witness Type: ☐ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☒ Self ☐ Organization

If you are representing an organization, please list what entity or entities you are representing:

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

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Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

Indirect support (In the interests of full transparency we are disclosing funders of projects that are only indirectly related to the subject of the hearing):

U.S. Air Force - \$199,801, PASC U.S.-UK-China Nonproliferation Dialogue

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

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Please see attached document

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- ☒ I have attached a written statement of proposed testimony.
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(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

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_____
Witness signature_____
3/19/21

Date

Federal Foreign Office, Germany	6547.00	EUR	2020 Capturing Technology. Rethinking Arms Control Conference
Embassy of Japan	40114.00	USD	Future of Arms Control
Ministry of Foreign Affairs, Netherlands	102195.00	USD	Future of Arms Control
Ministry for Foreign Affairs, Finland	50000.00	EUR	Future of Arms Control
Federal Department of Foreign Affairs, Switzerland	100000.00	USD	Future of Arms Control
Federal Foreign Office, Germany	200000.00	EUR	Future of Arms Control
Federal Foreign Office, Germany	25000.00	USD	2019 Nuclear Policy Conference
Dept. of Foreign Affairs and Trade, Australia	25000.00	AUD	2019 Nuclear Policy Conference
Ministry of Foreign Affairs, Netherlands	30000.00	USD	2019 Nuclear Policy Conference
Federal Department of Foreign Affairs, Switzerland	40871.00	USD	Bridging the Nuclear Divide
Ministry for Foreign Affairs, Sweden	600000.00	SEK	Bridging the Nuclear Divide

James Acton biography

James Acton holds the Jessica T. Mathews Chair and is co-director of the Nuclear Policy Program at the Carnegie Endowment for International Peace. A physicist by training, Acton's current research focuses on the escalation risks of advanced conventional weapons and the future of arms control. His work on escalation includes the Carnegie edited volume, *Entanglement: Chinese and Russian Perspectives on Non-nuclear Weapons and Nuclear Risks*, and the *International Security* article "Escalation through Entanglement."

Acton's publications span the field of nuclear policy. They include the Carnegie report, *Wagging the Plutonium Dog*, and two Adelphi books, *Deterrence During Disarmament* and *Abolishing Nuclear Weapons* (with George Perkovich). He co-wrote *Why Fukushima Was Preventable*, a groundbreaking study into the root causes of the accident.

An expert on hypersonic conventional weapons and the author of the Carnegie report, *Silver Bullet? Asking the Right Questions About Conventional Prompt Global Strike*, Acton has testified on this subject to the U.S. House of Representatives Armed Services Committee and the congressionally chartered U.S.-China Economic and Security Review Commission.

Acton is a member of the International Advisory Council for the Luxembourg Forum on Preventing Nuclear Catastrophe. He has published in the *New York Times*, the *Wall Street Journal*, the *Washington Post*, *Dædalus*, *Foreign Affairs*, *Foreign Policy*, *Science & Global Security*, and *Survival*. He has appeared on CNN's State of the Union, NBC Nightly News, CBS Evening News, and PBS NewsHour.

Ms. McCOLLUM. Thank you very much. Ms. Smithberger, please, we are anxious to hear your testimony.

SUMMARY STATEMENT OF MS. SMITHBERGER

Ms. SMITHBERGER. Thank you so much, Chair McCollum, Ranking Member Calvert, and esteemed members of the subcommittee for inviting me to testify today on future defense spending plans and the overseas contingency operations account. As I mentioned, I am Mandy Smithberger, the director of the Center for Defense Information on the Project on Government Oversight.

As you have noted in your opening statement, Chair McCollum, the subcommittee knows better than most the many ways the OCO account has been abused to circumvent spending limits put in place by the Budget Control Act. We think that the expiration of the Budget Control Act should be the end of using OCO.

We agree with what the committee wrote last year about OCO being an abject failure. And I agree with what you said, Representative Calvert, that we have to be smart and strategic about how we use our resources. Our work has found that the misuse of OCO is bad for the Department, and it is bad for the budget overall. We recommend ending its use to avoid creating and to avoid creating or using supplemental funds for base budget needs in the future.

The Department's reliance on supplemental and off-budget funds has become so commonplace in the past 20 years; it can be easy to forget just how usual the practice is. The usual practice in the United States has been to only use supplemental funding in the initial years of the conflict when the costs were unpredictable. What was previously about 2 percent of DOD spending has now become something closer to 10 percent in total discretionary funding for DOD.

The reliance on OCO harms planning and management making it easier to fund expensive and lower priority programs that wouldn't normally make the cut. It also adds additional budget instability and uncertainty for personnel and multiyear programs, making it that much harder for the Pentagon to think ahead. Our future security should not continue to rely on OCO.

Additionally, we would urge the committee to look at two other policies that fuel unsustainable top-line spending by reducing discipline and increasing the likelihood of wasting taxpayer dollars.

The first are statutory requirements for unfunded priorities list. By telling the Department's components that they will have two bites at the apple, Congress is increasing pressure and incentives to increase the Department's budget. Former Defense Secretary Robert Gates discouraged the practice, and through his leadership significantly curved the size and cost of those lists. Eliminating those statutory requirements would enhance discipline without jeopardizing Congress' ability to conduct oversight and receive feedback from the executive branch.

Second, we urge the committee to continue to examine whether new authorities given to the Nuclear Weapons Council will lead to wasteful spending. Allowing defense leaders to add their own spending priorities to other agencies' budgets without providing offsets is likely to crowd out other agencies' own priorities and lead to more spending.

In conclusion, OCO reform has been one of the rarer issues in Washington, garnering and continue to maintain bipartisan support. Moving OCO to bases included in the recommendations of both the Sustainability Defense Task Force and the National Defense Strategy Commission. While the former saw this as part of the strategy for necessary defense budget cuts, and the latter argued the budget should increase, both agreed on the need to stop using OCO.

Thanks to pressure from Congress and civil society, the Department has already begun planning to draw down its reliance on OCO. Both the Trump administration budget and the Future Years Defense Program would significantly decrease OCO starting this fiscal year.

The budget process should create clear priorities for spending and program execution. To the maximum extent possible, we should have a process that encourages the President and Congress to set responsible fiscal goals and make tough choices about national security priorities. OCO has enabled both endless war and unsustainable top-line growth by discouraging prioritization. We urge you to work with the Department by ending the use of the OCO account. Thank you again for the opportunity to testify, and I am happy to answer any questions you may have.

[The statement of Ms. Smithberger follows:]



Testimony of Mandy Smithberger, Director of the Center for Defense Information
 Project On Government Oversight
 before the House Appropriations Committee, Subcommittee on Defense
 on "Future Defense Spending"
 March 23, 2021

Chair McCollum, Ranking Member Calvert, and members of the Subcommittee, thank you for inviting me to testify today on future defense spending plans. I am Mandy Smithberger, the director of the Center for Defense Information at the Project On Government Oversight (POGO). POGO is a nonpartisan independent watchdog that investigates and exposes waste, corruption, abuse of power, and when the government fails to serve the public or silences those who report wrongdoing. We champion reforms to achieve a more effective, ethical, and accountable federal government that safeguards constitutional principles.

I'm especially happy to be talking to the subcommittee to share our views about the future of the Overseas Contingency Operations (OCO) account. This subcommittee knows better than most the many ways that this account has been abused to circumvent spending limits put in place by the Budget Control Act.¹ We agree completely with the diagnosis included in the committee's report last year that "the OCO experiment has been an abject failure and has given the Department a budgetary relief valve that has allowed it to avoid making difficult decisions."² This misuse of OCO is bad for the Department of Defense, and it's bad for the budget overall. We recommend ending its use.

The expiration of the Budget Control Act provides Congress and this administration with an important opportunity to adjust defense budget priorities. Ending off-budget accounts like OCO is in line with the new administration's commitment to ending endless wars and restoring regular order and responsible governing. Consistent with those goals, we support this committee's recommendation that the Department of Defense stop requesting funding for the OCO accounts, and would urge the committee to push the Pentagon to avoid creating or using supplemental funds for base budget needs in the future.

The department's reliance on supplemental and off-budget spending has become so commonplace in the past 20 years that it can be easy to forget just how unusual the practice is. From the 1950s to 2001, the United States only used supplemental spending to augment the Pentagon's base budget in the initial years of a war, when the costs were unpredictable. The Congressional Budget Office found that from 1970 to 2000, "nonbase funding accounted for

¹ Budget Control Act of 2011, Public Law 112-25, 125 Stat. 240.

² House Appropriations Committee, *Department of Defense Appropriations Bill, 2021, to accompany H.R. 7617*, H. Rep. No. 116-453, 5 (2020). <https://www.congress.gov/116/crpt/hrpt453/CRPT-116hrpt453.pdf>

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about 2 percent of DoD's total spending."³ Most if not all of the costs of war were incorporated into the department's base budget.⁴

The amount of spending through supplemental and off-budget spending since then is substantial and ripe for abuse.

The Congressional Research Service found that between fiscal year 2001 and fiscal year 2019 Congress appropriated nearly 10% of total discretionary spending—over \$2 trillion—as emergency requirements or for Overseas Contingency Operations.⁵

Continued reliance on the Overseas Contingency Operations account harms planning and management. As the Congressional Budget Office has previously testified, using OCO makes it easier to fund expensive and lower-priority programs that wouldn't normally make the cut.⁶ In a particularly telling example of insufficient planning, a \$33 billion OCO request for operations and maintenance several years ago came with only five pages of explanation from the Pentagon for how those funds would be spent.⁷

Reliance on OCO also adds unnecessary budget instability and uncertainty for personnel and multiyear programs. As former Navy Undersecretary Janine Davidson and Atlantic Council fellow Emerson T. Brooking wrote, funding programs through emergency, year-by-year appropriations "makes it virtually impossible for Pentagon officials to think ahead."⁸

OCO has become almost totally disconnected from its original purpose of supporting unanticipated, emergency, or difficult-to-plan costs for operations in Iraq and Afghanistan as both Congress and the Department of Defense have used the funds to support base budget needs. In perhaps the most galling example, only 15% of the \$165 billion fiscal year 2020 OCO budget request was for missions in Afghanistan, Iraq, and Syria.⁹ One metric of this discrepancy is the ratio of troop deployments to OCO spending. A Stimson Center report found that when OCO

³ Congressional Budget Office, *Overseas Contingency Operations: Trends and Issues* (March 7, 2019), <https://www.cbo.gov/publication/55012>.

⁴ Congressional Budget Office, *Funding for Overseas Contingency Operations and Its Impact on Defense Spending* (October 1, 2018), 2, https://www.cbo.gov/system/files/2018-10/54219-oco_spending.pdf; Jacob Marx, "The Pentagon's Wartime Slush Fund," Project On Government Oversight, March 26, 2015, <https://www.pogo.org/analysis/2015/03/pentagons-wartime-slush-fund/>.

⁵ Brendan W. McGarry, Congressional Research Service, *Overseas Contingency Operations Funding: Background and Status*, R44519 (September 6, 2019), 1-2, <https://crsreports.congress.gov/product/pdf/R/R44519>.

⁶ David Thornton, "Using OCO funds to bypass budget caps 'departure from historical norms,' CBO says," *Federal News Network*, March 1, 2019, <https://federalnewsnetwork.com/budget/2019/03/using-oco-funds-to-bypass-budget-caps-departure-from-historical-norms-cbo-says/>.

⁷ Bryan Bender and Jeremy Herb, "War budget might be permanent 'slush fund,'" *Politico*, March 24, 2015, <https://www.politico.com/story/2015/03/war-budget-might-be-permanent-slush-fund-116367>. For comparison, last year's operations and maintenance overview budget submission was 346 pages long. Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, *Operation and Maintenance Overview, Fiscal Year 2021 Budget Estimates* (February 2020).

⁸ https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2021/fy2021_OM_Overview.pdf.

⁹ Janine Davidson and Emerson T. Brooking, "The Pentagon's War Budget Won't Be Easy to Roll Back," *Defense One*, June 16, 2015, <https://www.defenseone.com/ideas/2015/06/pentagons-war-budget-wont-be-easy-roll-back/115432/>.

⁹ McGarry, *Overseas Contingency Operations Funding: Background and Status*, 27 [see note 5].



spending was at its peak, in fiscal year 2008, the U.S. spent about \$1 million in OCO per troop deployed. By the fiscal year 2017 request, that figure had nearly quintupled to \$4.9 million per troop.¹⁰ Admirably, the last Trump administration budget submission at least made clear that its request for OCO included \$16 billion for base budget needs.¹¹

OCO reform has been one of the rare issues in Washington to garner, and continue to maintain, bipartisan support.¹² Members in the House last year offered several bipartisan amendments to the National Defense Authorization Act that would have both required more transparency and the creation of a plan to end the department's reliance on OCO.¹³ Moving OCO to base was also included in the recommendations of both the bipartisan Sustainable Defense Task Force and the National Defense Strategy Commission. While the former saw this as part of a strategy for necessary defense budget cuts, and the latter argued the budget should increase, both agreed on the need to draw down from OCO.¹⁴ For the commission's part, its report criticized the use of OCO as "not the way to provide adequate and stable resources" for the department.¹⁵

Thanks to pressure from Congress and civil society, the department has already been planning to draw down its reliance on OCO. Both the Trump administration budget and the Future Years Defense Program would significantly decrease OCO starting this fiscal year.¹⁶ The goal should be to cease using it as soon as possible.

¹⁰ Laicie Heeley and Anna Wheeler, Stimson Center, *Defense Divided: Overcoming the Challenges of Overseas Contingency Operations*, Stimson Center (2016), 6. https://www.stimson.org/wp-content/files/file-attachments/DefenseDivided_OCO.pdf

¹¹ Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, *Defense Budget Overview*, May 13, 2020, 1-3.

https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2021/fy2021_Budget_Request_Overview_Book.pdf

¹² As a National Taxpayers Union report notes, "Progressives like Reps. Barbara Lee (D-CA) and Ilhan Omar (D-MN) have proposed decreasing or eliminating OCO funding, while conservatives like Sens. Mike Enzi (R-WY) and Rand Paul (R-KY) have proposed drawing down OCO budget authority over several fiscal years. Recent National Defense Authorization Acts (NDAAs), which almost always pass with bipartisan support, have included requirements for DoD to report on enduring costs funded through OCO and have sought to clarify the roles of inspectors general (IGs) in overseeing OCO funds." Andrew Lautz, National Taxpayers Union, *Reforming the OCO Account: A Better Deal for Taxpayers, Watchdogs, and the Military* (May 26, 2020). <https://www.ntu.org/publications/detail/reforming-the-oco-account-a-better-deal-for-taxpayers-watchdogs-and-the-military>

¹³ National Defense Authorization Act for FY 2021, H. Rules Comm. Print 116-57 (2020) (amendment 84, offered by Representatives Ralph Norman (R-SC) and Kurt Schrader (D-OR)), https://amendments.rules.house.gov/amendments/NORMSC_092_xml?10201430453045.pdf; National Defense Authorization Act for FY 2021, H. Rules Comm. Print 116-57 (2020) (amendment 132, Representatives David Schweikert (R-AZ) and Kurt Schrader (D-OR)) https://amendments.rules.house.gov/amendments/SCHWE1_037_xml?20OCO%20Criteria7132011070375.pdf

¹⁴ Center for International Policy, *Sustainable Defense: More Security, Less Spending* (June 2019), 6. https://67ae62e0-a930-4a42-8f98-6c406ca4d9de.filesusr.com/ugd/3ba8a1_635241b0a0894b3fb377c88e500c3620.pdf

National Defense Strategy Commission, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (November 13, 2018), xii. <https://www.usip.org/sites/default/files/2018-11/providing-for-the-common-defense.pdf>

¹⁵ National Defense Strategy Commission, *Providing for the Common Defense*, 59 [see note 14].

¹⁶ Congressional Budget Office, *Long-Term Implications of the 2021 Future Years Defense Program* (September 2020). <https://www.cbo.gov/publication/56554>

I would also urge the committee to look at other current policies that fuel the unsustainable topline by reducing budget discipline and increasing the likelihood of wasting taxpayer dollars, particularly statutory requirements for the military services, combatant commands, and the Missile Defense Agency to provide Congress annual unfunded priorities lists.

An ideal budget process, at the Department of Defense or any other federal agency, should create clear priorities for spending and program execution. By telling Department of Defense components they'll have two bites at the apple, Congress is encouraging the already palpable pressure and incentives to increase the department's budget. Last year's list of unfunded priorities totaled \$18 billion, which was more than the budget requests for the departments of Treasury, Interior, and Labor.¹⁷ Prior to this requirement, former Defense Secretary Robert Gates discouraged the practice, which the Army's then-vice chief of staff General Peter Chiarelli said encouraged closer scrutiny and a significant reduction in the size and costs of those lists.¹⁸ Getting rid of this statutory requirement would enhance discipline and civilian control without jeopardizing Congress's ability to conduct oversight and receive feedback from the executive branch.

POGO also urges the committee to continue to examine whether new authorities given to the Nuclear Weapons Council in last year's National Defense Authorization Act will lead to wasteful spending.¹⁹ Allowing Defense leaders to add their own spending priorities to other agencies' budgets, without any requirement to propose offsets to pay for proposed spending increases, is likely to lead to the nuclear weapons spending budget going only one direction—up.

To the maximum extent possible we should have a process that encourages the president and Congress to set responsible fiscal goals and make tough choices about priorities. We urge you to work with the department by ending the use of the OCO account.

Thank you again for the opportunity to testify. I am happy to answer any questions you may have.

¹⁷ Sandra Erwin, "U.S. military's annual list of 'unfunded priorities' includes \$1 billion for Space Force," *Space News*, February 22, 2020. <https://spacenews.com/u-s-militarys-annual-list-of-unfunded-priorities-includes-1-billion-for-space-force/>; Taxpayers for Common Sense, "OCO is Fourth Largest 'Agency,'" February 10, 2020. <https://www.taxpayer.net/budget-appropriations-tax/oco-is-fourth-largest-agency/>

¹⁸ Mark Thompson, "Gates Takes Aim at the Military's Spending Wish Lists," *Time*, July 17, 2009. <http://content.time.com/time/nation/article/0,8599,1911152,00.html>

¹⁹ John Donnelly, "Congress moves to give Pentagon more say in Energy Department's nukes budget," *Roll Call*, December 7, 2020. <https://www.rollcall.com/2020/12/07/congress-moves-to-give-pentagon-more-say-in-energy-departments-nukes-budget/>; House Appropriations Committee, *Department of Defense Appropriations Bill, 2021*, to accompany H.R. 7617, H. Rep. No. 116-453, 422 (2020). <https://www.congress.gov/116/crpt/hrpt453/CRPT-116hrpt453.pdf>



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Committee: _____

Subcommittee: Defense 

Hearing Date: 03/23/2021

Hearing Title  : _____

Future Defense Spending

Witness Name: Mandy Smithberger

Position/Title: Director

Witness Type: ☒ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☒ Self ☒ Organization

If you are representing an organization, please list what entity or entities you are representing:

Project On Government Oversight

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

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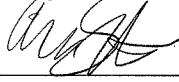
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_____
Witness signature_____
March 19, 2021

Date

Mandy Smithberger
Director of the Center for Defense Information

Mandy Smithberger rejoined POGO as the director of the Center for Defense Information in December 2014. Previously she was a national security policy adviser to U.S. Rep. Jackie Speier (D-Calif.). There, she worked on passing key provisions of the Military Whistleblower Protection Enhancement Act into law, which expands protections by increasing the level of Inspector General review for complaints, requiring timely action on findings of reprisal, and increasing the time whistleblowers have to report reprisals. Previously an investigator with POGO, she was part of a team that received the Society of Professional Journalists' Sunshine Award for contributions in the area of open government.

Mandy is an expert on national security, Pentagon reform and the Defense industry revolving door. She has appeared recently on CNN, Fox News and *NPR*, and she's been cited by various outlets, including the *New York Times*, *Washington Post*, *USA Today*, Reuters, *Politico*, and *Foreign Policy*.

Mandy received her B.A. in government from Smith College and her Masters in Strategic Studies and International Economics from Johns Hopkins University's School of Advanced International Studies. She also served as an analyst at the Defense Intelligence Agency and U.S. Central Command.

Ms. MCCOLLUM. Thank you. And last but not, least Mr. Zakheim, will you please share with us your thoughts on this issue.

STATEMENT OF MR. ZAKHEIM

Mr. ZAKHEIM. Thank you, Chair McCollum, Ranking Member Calvert, and distinguished members of the subcommittee, I am grateful for this invite—invitation to testify today on future defense spending.

The White House has recently released national security guidance reaffirmed that the U.S. faces a growing rivalry with the quote, “more assertive and authoritarian China,” while they continue to face threats like Russia, Iran, cyber and nuclear proliferation to name only a few. Though these challenges have economic, diplomatic, and technological dimensions, an adequately resourced military is critical to successfully confront these challenges.

To that end, I want to highlight three overarching points. Number 1, a 3 to 5 percent real growth per annum increase in defense spending is needed for the DOD to execute its current and likely future mission requirements.

Number 2, defense cuts seriously threaten the United States’ ability to win a high intensity war with a pure adversary, yet alone simultaneously deter opportunistic aggression in the second theater.

And, No. 3, below the top line, the Pentagon faces critical, strategic choices regarding how to allocate its resources to sustain and modernize the force and compete with near peer competitors like China.

Defense budgets must be strategy-driven, not budget-driven. Secretary Austin echoed this view during his Senate confirmation hearing, saying, quote, “our resources need to match our strategy, and our strategy needs to match our policy.”

The 2018 bipartisan National Defense Strategy Commission, which I was able to serve on, warned that even with its current defense budget, quote, “U.S. military could lose the next state-versus-state war it fights.” While the Trump administration deserves some credit for launching an effort to rebuild the military, this work is by no means complete. In fact, much of the increased funding this committee appropriated in the fiscal years 2018 through 2020 was allocated towards restoring readiness, and only a small percentage focused on modernization.

The Biden administration national security guidance indicates that China will remain the pacing threat with Europe and Middle East continuing to demand attention.

Even before the economic downturn triggered COVID-19, calls to reduce defense spending emerged from elements in both political parties. After examining the real consequences of cuts to the Pentagon’s resources through the Reagan Institute and the Center for Strategic and Budgetary Assessments, Strategic Choices Exercises, it was clear that one, a 10 percent cut can reduce the U.S. to a de facto hemispheric power by 2030.

And, two, while flat budgets may appear to be sufficient to maintain the status quo, readiness and modernization accounts tend to shrink in a flat budget scenario. This would leave the United

States less able to either deter adventurism them by adversaries or to secure allies that America will come to their Defense.

Now, even with the top line that offers some budget growth, the DOD cannot avoid difficult strategic choices to balance the need to modernize the force for the future and the need to maintain a force structure capable of meeting the national challenges of today.

While some progress has been made DOD needs to continue developing operational concepts that incorporate new technologies and systems that are often the focus of future force discussions, such as machine learning and artificial intelligence and some of the other technologies my colleague has offered in her testimony.

Congress has done well to mandate such priorities in recent legislation. Yet, this will continue to be a challenge for the Pentagon and is an area that will benefit from congressional oversight. Calls to rapidly integrate new technologies need to be accompanied with a radical approach to the Pentagon's management practices, specifically, how the DOD acquires new technology.

My testimony offered a number of specific recommendations for the Defense Department on those points. I will just mention one now. The DOD should measure progress in contracts awarded, total dollars awarded, and speed of procurement.

Even amidst this shift to new technologies and procurement processes, the Pentagon should not trade reliable capability for systems that do not exist beyond a PowerPoint slide. The temptation to trade real capability today for something new in the future will require Congress to play a critical and careful role in ensuring such legacy systems are indeed unneeded.

To that end, defense investments should be tightly linked to and measured against specific war-fighting objectives. The highest priority should be on investments that will make the greatest impact in a reasonable timeframe in the most pressing scenarios confronting our military, like the Taiwan scenario in the Baltic states.

In 1984, President Reagan observed, quote, "history teaches that war begins when governments believe the price of aggression is cheap. To keep the peace, we and our allies must be strong enough to convince any potential aggressor that war can bring no benefit, only disaster." The recently released Reagan National Defense Survey revealed that support for American leadership in the world, consistent with President Reagan's, "peace through strength" philosophy remains strong.

Americans understand that what it will take to sustain the peace and our prosperity and are willing to make the investments necessary to support a strategy that will deliver just that.

Thank you to committee for having me. I look forward to answering your questions.

[The statement of Mr. Zakheim follows:]



TESTIMONY BEFORE THE HOUSE APPROPRIATIONS
COMMITTEE DEFENSE SUBCOMMITTEE

HEARING ON FUTURE DEFENSE SPENDING

March 23, 2021

Statement by Mr. Roger Zakheim
Director, Ronald Reagan Institute

Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the Subcommittee, thank you for inviting me to testify today on the future of the defense budget.

The White House's recently released Interim National Security Strategic Guidance reaffirmed the US faces a "growing rivalry" with a "more assertive and authoritarian China" while we continue to face threats like Russia, Iran, terrorism, cyber and digital threats, and nuclear proliferation to name only a few. Though these challenges have economic, diplomatic, and technological dimensions, an adequately resourced military is critical to successfully confront these challenges. The fundamental mission of the U.S. government is to deter a great-power war and, if deterrence fails, to prevent escalation of the conflict and end the war on terms favorable to the United States and its allies.

In order to carry out this mission successfully:

- (1) A 3-5% real growth per annum increase in defense spending is needed for the DOD to execute its current mission requirements.
- (2) Defense cuts seriously threaten the United States' ability to win a high-intensity war with a peer adversary, let alone simultaneously deter opportunistic aggression in a second theater.

(3) Below the “top line”, the Pentagon faces critical strategic choices regarding how to allocate its resources to sustain and modernize the force and compete with near peer competitors like China.

Budget growth: Aligning budgets with strategy

Defense budgets must be strategy-driven and fiscally informed, not the reverse. Secretary Austin echoed this view during his Senate confirmation hearing saying that our “resources need to match our strategy and our strategy needs to match our policy.”^{vi} As the 2018 bipartisan National Defense Strategy Commission (NDS Commission) outlined, Russia and China have embarked on massive military modernization initiatives that have diminished America’s longstanding military advantages, and even surpassed the U.S. in some key capabilities. The NDS commission, whose members included Deputy Secretary of Defense Kathleen Hicks, warned that, even with its current defense budget, “the U.S. military could lose the next state-versus-state war it fights.”^{vii} These trends have continued: despite the fiscal challenges posed by the COVID-19 crisis, Beijing announced a 6.8% increase in defense spending in March 2021.^{viii} While the Trump administration deserves some credit for launching an effort to rebuild the military, this work is by no means complete. In fact, much of the increased funding this committee appropriated in fiscal years 2018 through 2020 was allocated toward restoring readiness with a small percentage focused on modernization.

The White House’s recently released Interim National Security Strategic Guidance indicates that, while there may be some changes in prioritization and tactics, the Department of Defense’s (DOD) mission sets are likely to remain consistent with the 2018 National Defense Strategy. That is, China will remain the pacing threat with Europe and the Middle East continuing to demand attention. Accordingly, the NDS Commission’s recommendation that a 3 – 5% real growth per annum increase in defense spending is still an urgent priority for the U.S. military to project power and uphold alliance commitments. While the Commission noted that this number is more “illustrative than definitive” what is clear is that real budgetary growth is required to maintain readiness and modernize the force.

Assessing the impact of defense cuts

Even before the economic downturn triggered by COVID-19, calls to reduce defense spending emerged from elements in both political parties. Now, with historic deficits following federal spending on COVID-19 relief, those calls are increasing. To examine the real consequences of cuts to the Pentagon’s resources, the Ronald Reagan Institute and the Center for Strategic and Budgetary Assessments (CSBA) hosted two Strategic Choices Exercises this past fall. Bipartisan groups of recognized leaders in their fields — defense and budget experts, current and former policy makers, and industry executives — utilized CSBA’s interactive Strategic Choices Tool to weigh the tangible implications of defense budget changes.

The results of this bipartisan group effort were clear: defense budget cuts would have devastating consequences of our military and our national security. A ten percent cut – a proposal introduced (and soundly defeated) in both chambers last Congress – would leave the United States with a

military that is incapable of carrying out the current National Defense Strategy. It would compel the Department of Defense to re-examine its current standard of maintaining a force that can win one war while deterring another. To realize cuts of this magnitude, experts were forced to significantly reduce the military's force structure — the size and organization of our military — leaving the participants to question America's ability to win one war, let alone deter a second.^{iv} In other words, "with cuts of this magnitude the United States could be reduced to a de facto hemispheric power by 2030."^v

On the strategic level, the consequences are no less real. Defense cuts would place further strain on an alliance system already under severe pressure. They would leave the United States with a significantly reduced forward presence that would be less able either to deter adventurism by adversaries or to assure allies that America will come to their defense.

Even flat budgets are effectively a cut. The previous Administration's budget request for FY 2021, when accounting for inflation, offered no increase from the previous fiscal year. While this may appear to be sufficient to maintain the status quo, readiness and modernization accounts tend to shrink in a flat budget scenario as other budget lines, such as personnel and operations and maintenance accounts, tend to see real growth.

Thus, flat budgets exacerbate the Department's modernization challenges. All three legs of the nuclear triad require recapitalization in addition to its command-and-control systems. With respect to conventional forces, the Pentagon continues to face the reality of decades of neglected modernization costs. Whether caused by the wars in Iraq and Afghanistan or the impact of the Budget Control Act, we have not invested anywhere near levels necessary for sustained modernization. Underinvestment in conventional forces makes talk of fielding a 355 ship Navy, 386 squadrons or an Army of 500,000 active soldiers seem aspirational at best. The result is a fighting force with aircraft, ships and ground vehicles that belong more to the twentieth than the twenty-first century, with the added challenge that we are increasingly a smaller force with platforms that cost more to maintain. As the NDS Commission noted, without serious conventional force modernization, the U.S. may need to rely more on its nuclear arsenal to deter Russia and China.^{vi} To realize National Defense Strategy's admonition that "we cannot expect success fighting tomorrow's conflicts with yesterday's weapons or equipment", Congress should provide the resources meet the modernization needs of the military.^{vii}

Dollars do not guarantee success: Strategic choices beneath the topline

Even with a topline that offers some budget growth, the DOD cannot avoid difficult strategic choices to balance the need to modernize the force for the future of war and the need to maintain a large enough force structure to meet the national security challenges of today. Decades of delayed modernization programs have created a force that is largely dependent on legacy platforms that were developed and procured some four decades ago during the Reagan military build-up. All the while, adversaries have invested in blunting America's ability to project military power abroad, including by developing the capability to strike critical bases of

operations, disable information networks, and interfere with communication, navigation, and imagery satellites that support military operations.

While some progress has been made, DOD needs to continue developing operational concepts that incorporate new technologies and systems that are often the focus of future force discussions. Thus, machine learning and artificial intelligence capabilities, hypersonic weapons, next generation space assets, and cutting-edge microelectronics, among others, must be adopted and integrated into existing platforms when possible and become the centerpiece of new platforms. Congress has done well to mandate such priorities in recent legislation, yet this will continue to be a challenge for the Pentagon. As the Reagan Institute outlined in its Task Force on the National Security Innovation Base:

“technological development relevant to national security is no longer exclusively or even primarily in the control of the Department of Defense and its prime contractors. In the past, cutting-edge technology was usually developed by the government sector for military use and then migrated into the civilian sector. Today, the direction of innovation has reversed. Many of the technologies most important to national security are being developed and produced for civilian purposes by civilian actors who have no history with or connection to the national security community. China is aware of this new reality. Its policy of military–civil fusion seeks to better exploit dual-use technologies originating from the commercial sector. To avoid a crippling competitive disadvantage, the United States must adopt means to accomplish the same end.”^{viii}

Calls to rapidly integrate new technologies need to be accompanied with a radical approach to the Pentagon’s management practices, specifically how the DOD acquires new technologies. The Reagan Institute Task Force offered a number of specific recommendations for the Defense Department on this point, including: (1) it should make use of its alternative acquisition pathways to award contracts as part of programs of record to companies to ensure a sustainable funding profile; (2) it should measure progress in contracts awarded, total dollars awarded, and speed of procurement, focusing on writing fewer, larger checks both as a way to leverage key emerging technologies and as a signal to investors; and (3) should overhaul software acquisitions to move away from requirements lists to iterative capabilities and maximize the use of commercial standards for interoperability.^{ix} Other areas need increased attention too, such as increased and deeper industrial cooperation with our allies, investment in on-shoring manufacturing capacity for critical areas of our supply chain, and workforce reforms within the defense industrial and innovation bases.

Yet, even amidst this shift to new technologies and procurement processes, the Pentagon should not trade reliable capability for systems that do not exist beyond a PowerPoint slide. Language in the Interim National Security Strategic Guidance, which calls for a shift from “unnecessary legacy platforms and weapons systems to free up resources for investments in the cutting-edge technologies and capabilities”, suggests the Biden Administration is sensitive to this point. The temptation to trade real capability today for something new in the future will require Congress to play a critical and careful role in ensuring such legacy systems are indeed “unnecessary.” We should not be jettisoning aircraft carriers, for example, until there are reliable operational

concepts and real assets to replace them with. Our adversaries will not stop and wait for us to modernize our forces. DOD needs to retain a large enough force structure and readiness level that can meet the national security challenges of today.

To that end, defense investments should be tightly linked to and measured against specific warfighting objectives. The highest priority should be on investments that will make the greatest impact in a reasonable timeframe in the most pressing scenarios confronting our military, specifically in Taiwan or the Baltic States. Funding for the Pacific Deterrence Initiative is particularly important. To the extent we absorb risk, it should be in regions and capabilities that are not linked to the threat posed by China and Russia.

Where savings are identified inside the defense budget those funds should be reprioritized to address strategic priorities. The Army's "Night Court" process is a good example. It clearly identified sources of savings and mapped the reinvestment of those resources to modernization initiatives. Leaders in the defense establishment must be empowered and incentivized to find savings and reallocate them to the most significant strategic priorities.

Conclusion

In 1984, President Reagan observed, "history teaches that war begins when governments believe the price of aggression is cheap. To keep the peace, we and our allies must be strong enough to convince any potential aggressor that war could bring no benefit, only disaster." The recently released Reagan National Defense Survey reveals that support for American leadership in the world consistent with President Reagan's "peace through strength" philosophy remains strong. Three in four Americans, including significant majorities of both Republicans and Democrats, favor increasing defense spending. When asked if the United States should maintain military bases around the world or reduce our military presence overseas, nearly two in three Americans prefer the former—also with strong bipartisan support.^x Americans understand what it takes to sustain the peace and our prosperity, and they are willing to make the investments necessary to support a strategy that delivers just that.

ⁱ <https://www.armed-services.senate.gov/hearings/watch?hearingid=B375A7FA-5056-A066-60BB-60103D5F5D6F>

ⁱⁱ <https://www.usip.org/sites/default/files/2018-11/providing-for-the-common-defense.pdf>

ⁱⁱⁱ <https://www.csis.org/analysis/understanding-chinas-2021-defense-budget>

^{iv} https://www.reaganfoundation.org/media/356490/rri_csba-americas-strategic-choices.pdf

^v <https://www.reaganfoundation.org/reagan-institute/centers/articles/biden-s-post-covid-defense-budget-choice-a-resurgence-or-a-decline/>

^{vi} <https://www.usip.org/sites/default/files/2018-11/providing-for-the-common-defense.pdf>

^{vii} For more on challenges surrounding modernization, see a new report by Mackenzie Eaglen

<https://link.edgepilot.com/s/333541b2/FUoJfsyfukeG5LzTJQ5xww?u=https://www.aei.org/research-products/report/2020s-tri-service-modernization-crunch/>

^{viii} https://www.reaganfoundation.org/media/356469/task-force-report_011121.pdf

^{ix} *Id.*

^x <https://www.reaganfoundation.org/media/356700/2021-rri-survey-summary.pdf>

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Appropriations

Subcommittee: Defense

Hearing Date: 03/23/2021

Hearing Title :

Future Defense Spending

Witness Name: Roger I. Zakheim

Position/Title: Director, Ronald Reagan Institute

Witness Type: ☐ Governmental ☒ Non-governmental

Are you representing yourself or an organization? ☒ Self ☐ Organization

If you are representing an organization, please list what entity or entities you are representing:

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

I am Director of the Reagan Institute, the Washington Office of the Ronald Reagan Presidential Foundation & Institute, a 501(c)3 charged with promoting President Reagan's values, which include a strong national defense. I serve also on the Board of the National Defense Industrial Association which is a 501(c)3 founded to educate its constituencies on all aspects of national security.

Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

None

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

None

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

- ☐ I have attached a written statement of proposed testimony.
- ☒ I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include— (i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(ii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

False Statements Certification

Knowingly providing material false information to this committee/subcommittee, or knowingly concealing material information from this committee/subcommittee, is a crime (18 U.S.C. § 1001). This form will be made part of the hearing record.

Witness signature



3/19/21

Date

ROGER ZAKHEIM**WASHINGTON DIRECTOR, RONALD REAGAN
PRESIDENTIAL FOUNDATION AND INSTITUTE**

Prior to his appointment at the Ronald Reagan Presidential Foundation and Institute, Mr. Zakheim practiced law at Covington & Burling LLP in the firm's Public Policy and Government Affairs practice group, where he served as co-chair. Before joining the firm, he was General Counsel and Deputy Staff Director of the U.S. House Armed Services Committee. In this role, Mr. Zakheim managed the passage of the annual National Defense Authorization Act (NDAA). The NDAA is the annual defense policy bill which authorizes the Defense Department's \$600 billion budget. Mr. Zakheim previously served as a Congressionally appointed Commissioner on the Commission on the National Defense Strategy of the United States. He currently serves on the National Defense Industrial Association's Board of Directors, the Center for Strategic and Budgetary Assessments' Advisory Council, and the Alexander Hamilton Society's Board of Advisors.

Mr. Zakheim's previous experience includes serving as Deputy Assistant Secretary of Defense, where he managed the department's policies and programs related to the Iraq and Afghanistan coalition affairs.

Mr. Zakheim frequently speaks and writes on national security and defense issues. His views have appeared in the *Wall Street Journal*, *New York Times*, *Politico*, *National Public Radio*, *Fox News*, *CNN*, *BBC*, *The Weekly Standard*, *National Review*, among other media outlets.

Ms. MCCOLLUM. Will you please give us the first question for our panel?

RUSSIA AND CHINA CYBER ACTIVITIES

Mr. AGUILAR. Thank you, Madam Chair. Thank you for having this hearing, and I appreciate the panelists' time and testimony.

Ms. Howe, we have heard a lot about SolarWinds and Microsoft Exchange hacks a few months ago. Recently, we heard the first about this breach. And then earlier in March, Microsoft announced the vulnerabilities within its Exchange Server and whether the fallout is still being measured. But, can you give us a sense about how the amount of resources that Russia and China dedicate to cyber activities has changed over the past 10 years?

Ms. HOWE. Thank you, Congressman Aguilar, I will be the first to admit that I am not an expert on the resource spending. What I can tell you is from a strategic priority and a competitive strategic perspective, there is no question that cyberspace is critically important to the priority that both countries have.

And these operations, SolarWinds and the Microsoft Exchange Servers are just one example of how quickly they move, how purposefully they move, how stealthily they move, and how they can stake advantage and understand what our weaknesses are and use them for all of their priorities, whether they are military, whether they are national security, whether they are economic, whether they are societal.

There is no question that it is of competitive importance, it is of strategic importance to both of them. Their operations are very effective, and they have been able to carry them out with very little fear of retribution or consequence. And that is ultimately the problem. We are moving much slower.

Harvard sociobiology Professor E.O. Wilson has this great quote which is, "the problem with humanity is that we have paleolithic emotions, medieval institutions, and God-like technology." And today we haven't figured out how to organize to make sure that that God-like technology, that for the most part, we as a country has developed isn't used against us. And right now our adversaries are using it against us. It is a critical priority to both of them.

RESPONSES TO CYBER ACTIVITIES

Mr. AGUILAR. How should we respond to these types of activities? You mentioned consequences. You know, what should we be thinking through, and what types of investments should the subcommittee be looking to make in the future moving forward?

Ms. HOWE. That is a great question. When we look at the SolarWinds intrusion, at its core, as of today, it remains fundamentally an espionage operation. And how we respond to an espionage operation is probably very different than how we would respond if the goal was something different.

What I would tell you is that Russia is—Russians are behind most of their ransomware attacks that we suffer in this country. Those attacks are overwhelming our security professionals, and they are preventing us from focusing on more strategic issues and more critical vulnerabilities like the ones we have seen in SolarWinds and the Microsoft Exchange Servers.

So, if we wanted to reduce the threat surface and enable and empower our security professionals, responding to Russia both harboring and potentially encouraging these criminal gangs would be fully appropriate. And using our full arsenal of national power, including economic tools such as sanctions, from my perspective would be an appropriate thing to do.

As we think about funding, there has been a fair amount of funding going to DHS and CISA, which is very important. Our response, though, has to be a whole of government response. And we have to ensure that we do not lose our technology edge. So funding research and innovation, and, especially, how we securely develop new technologies is critically important. We have to learn from our 5G experience and make sure that we never lose our seat at the innovation table. And as we look at the sort of next generation of technology, but especially with respect to the subcommittee superfast computing and next generation encryption which is it cable stakes, we have to make sure that we maintain that leadership position.

We need to make sure that cyber command and NSA which has significant capabilities today continue to receive the funding they need to support all the agencies as they go after cyber actors.

CISA will require support as it operationalizes. And we need to remain clear-eyed about the timeline and leadership is going to take for CISA to fully be able to execute on its mission, and the support it is going to need from agencies like NSA to provide the technical depth that they need in order to carry out their mission.

In the meantime, there has been other suggestions that have been put out there, for example, creating something like a cyber National Guard, or a cyber civilian corps. When we look at ransomware attacks against our municipalities, they are under resourced and unable to respond to them in a way that is efficient.

I proposed 15 in my written testimony. I would be happy to explore more.

Mr. AGUILAR. Thanks, Ms. Howe. I appreciate it. I yield back, Madam Chair.

Ms. MCCOLLUM. Well, thank you. Mr. Calvert.

RISK MITIGATION

Mr. CALVERT. Thank you, Madam Chair. I just want to make a quick point. Both the Republican and Democratic administrations have found that a service life extension program for the ground-based system ends up costing us more and without enabling the system to be effective against current and future threats. So, I just wanted to point that out before I ask my question.

The 2018 National Defense Strategy states that the department needs to focus its resources to counter China and Russia. However, our military, we are still carrying out low intensity missions throughout the world.

While I agree that we should prioritize our research and development efforts on fielding capability, which is decisively win a war against threats like China, I believe we must also be realistic about the missions we are currently tasking the DOD with. Even the best resource strategy inevitably allows for some risk. Where should the United States be willing to absorb that risk?

I guess for the whole panel, who is best prepared to answer that? Maybe Roger, your since I asked Roger on here.

Mr. ZAKHEIM. Thank you, Congressman. I am happy to take that on. And you are right to mention the National Defense Strategy had the focus on China and great power competition, which includes Russia as well. I would say if there was any area where we are supposed to absorb risk per the 2018 National Defense Strategy is in those areas like the Middle East, low-end conflict where the resources should be less intensive. The platforms that we use in those theatres should be revisited to make sure, for example, we are not using fifth-generation platforms, fighter aircraft to deal with a deterrent mission that doesn't require something like that.

So, less use of high-end capability, reduction of force structure that can be applied against the threat posed by China were the areas that both the National Defense Strategy and the 2018 National Defense Strategy Commission focused on.

I would highlight, though, Mr. Calvert that that was the to say where we should absorb some risk, not that we should leave those areas entirely. So some level of deterrence is required to ensure that we don't find ourselves back in some form of conflict there because we have talked away from the deterrence that we have put in place there.

DEPARTMENT OF DEFENSE BUDGET

Mr. CALVERT. With that, you would probably agree that to sustain the objectives of the National Defense Strategy, if Congress doesn't provide real growth to the budget, it will be very difficult to do that.

Mr. ZAKHEIM. Mr. Calvert, I do agree with that. And I think really the point I am trying to convey which justifies the 3 to 5 percent real growth that I outlined in my statement is that we still need to be present in multiple theaters around the world. While we don't want to emphasize the Middle East or central command theater like we had done a decade or so ago, we are not going to walk away from it either.

And then to lead in Indo-Pacific, to lead in Asia with NATO—excuse me in Europe with NATO, and then to also deter in the Middle East, those three regions are animating our military and required significant resources.

Mr. CALVERT. All right. Let me question on—

Ms. SMITHBERGER. If I may just add, I think the other thing that the committee needs to look at is some of the weapons systems that we are acquiring where we are learning that they aren't serving the missions that they should be; that they are too expensive to maintain; and in some cases where we need to slow down production of those systems so that we can make sure that we get things right so that they can be maintained and effective, and we are not putting those costs on the force.

Mr. CALVERT. Which system are you talking about?

F-35 CHALLENGES

Ms. SMITHBERGER. I think we are seeing increasingly challenges with the F-35. I know that won't be a very popular one to highlight, but that we already have increased development costs incur-

ring. That when you look at the report of the National Commission on Aviation Safety that it is not as reliable as we expected it to be. So it is important that we get this program right so that it is going to be able to serve us in the future.

Mr. CALVERT. I hear that, and the problem is that we made a determination to move to the F-35, retire the F-18, the F-15, the F-16, and that we have gone to that platform. And, unfortunately, those other aircraft are not survivable in a war with a near peer competition such as China or Russia. They are out of the air almost immediately.

And so really at this point, our only alternative is the F-35 until we get to another level of aircraft, a generation six aircraft, which we are not at yet.

So even though we have had some difficulties with these platforms—we had problems with a C-17 when it first started. But, unfortunately, we are involved with the F-16 whether we like it or not at this point.

By that way, that brings up a question on innovation. All of these systems have software problems. Your F-35 is no exception to that. And it is because we don't have new technologies capabilities that we should have to test and retest that software quickly and to make sure that it is capable. And so, the smaller companies, I think, have a better understanding of that type of technology, medium and small companies, which have a hard time working with the Department of Defense.

And so, as we move forward, Madam Chairwoman, I hope we can find ways to get these innovators in the Department so they can help us with our national security.

And with that, I yield back the balance of my time.

Ms. MCCOLLUM. Thank you, and that is a good thing to bring up. And I want to make sure that we do talk about how we help small and medium-sized businesses, and part of that is them having access to classified space in which to work in, which is sometimes not near where their production facilities and where they are doing their work.

Mrs. Kirkpatrick.

SUPPLY CHAIN VULNERABILITY

Mrs. KIRKPATRICK. Thank you, Madam Chair, and thank you for having this hearing. My question is for Ms. Howe. Many of the modernization efforts within the Department of Defense require increased network capability, such as 5G to connect sensors and process large amounts of data quickly. The Department of Defense has acknowledged the importance of 5G but has only fielded a few pilot projects. Additionally, we land—we lack an end-to-end organic U.S. supply chain, which requires us to rely on foreign suppliers, including China.

Is it too late to get ahead of our adversaries when it comes to 5G and supply chains? And should the Department of Defense be leading the effort in 5G considering its inherent need? My other question is where should this subcommittee invest to secure our technology supply chain in 5G semiconductors and microchips to position us to compete better?

Ms. HOWE. Thank you so much, Congresswoman, for that important question. It is not too late, but we have to move fast. Time is not on our side. The clock is ticking. We lost a lot of time with 5G, but we can absolutely make up ground. And we can't lose your leadership position either with respect to 5G or any future technology that comes up.

The future of our military, the future of our weapon systems are all dependent on understanding the security risks that are inherent in not only the technologies, but the interdependence of these technologies. And that interdependence is what SolarWinds is fundamentally about.

And so if we acknowledge that we live in a software-enabled world today, in an IP-enabled world today, in a technology-enabled world today, and understand that the best militaries will be defined by access to the best software in these best technologies, but a secure form of those software's, then it becomes important to organize around that.

I do believe it needs to be important that we reward the Department of Defense and program managers not just with meeting time and costs but also meeting security requirements with respect to the systems that they deployed. So, all of that, I believe, can be done, and time is not—it is not too late.

The question you raise around supply chain vulnerability is one of the biggest issues we have today. And, again, the SolarWinds intrusion by Russia was very indicative of how hard it is to find supply chain vulnerabilities. And this one was discussed almost by accident but by FireEye.

It underscores the fact that without mandated information-sharing, which again the DOD can mandate information-sharing within its contractor base, much more easily than we can do that in the private sector, we would have never found out about what is happening with SolarWinds.

There have been many recommendations from a number of commissions of creating an organization that is responsible the Europeans are doing this now for assessing supply chain risks both with respect to the most critical piece of software that we use, as well as with the most critical vendors that we use, and to create trusted lists of suppliers.

This is hard. We should not be asking every organization to do it for itself, every agency to do it for itself. It requires for firmware level and code level inspection. And it is important to have a centralized function that can do that. And, again, I would just say if nothing else with respect to my testimony, pace matters. Moving fast really matters.

Mrs. KIRKPATRICK. Thank you.

Mr. ZAKHEIM. Can I just add?

Mrs. KIRKPATRICK. Okay.

Mr. ZAKHEIM. Just one more piece to that, Congresswoman. I think on-shoring manufacturing capability is critical here. I mentioned Taiwan in my opening statement. You are talking about technologies that rely on semiconductors that for the most part are manufactured in Asia; many in Taiwan. That is precisely the area that China is challenging. And so on-shoring that capability in the

United States and investment and manufacturing will be a key area for this committee and the Congress to look at.

Mrs. KIRKPATRICK. Thank you. I have some more questions, but I don't know that we can get to them. My time is just about expired.

But how does the United States government recruit, develop, and retain the best cyber professionals when most of the innovation and highest paying jobs in this area are in the commercial sector?

Ms. HOWE. The mission matters, and it matters in the industry. I do believe that there is a compelling mission that we can use to recruit the best. The authorities that exist, especially within the Department of Defense in terms carrying out cybersecurity mission is very compelling. If we have a commitment to training people and create a way for cybersecurity professionals to come and serve in the government, take that training back out to the private sector, and to be able to come in and out, we can do a lot to solve that problem.

And I will say we have to recruit a much broader base of people to our industry, and this is where diversity and equity matters. There are some tremendous programs that are being run by NSA, FBI, CISA, to encourage STEM education and cybersecurity education with diversity and equity in mind. And we have highlighted those programs. We need to fund their rollout.

Mrs. KIRKPATRICK. Madam Chair, do I have time for one more question.

Ms. MCCOLLUM. We are going to have time to do another round. Are you able to stay with us, Mrs. Kirkpatrick?

Mrs. KIRKPATRICK. Yes. Thank you. I yield back.

Ms. MCCOLLUM. Oh, perfect. Mr. Womack.

DEFENSE SPENDING ISSUES

Mr. WOMACK. Thank you, Madam Chair, and thanks to the participants on this committee. Count me as a "peace through strength" guy. Roger alluded to that, and as he should, with the Reagan Institute. I believe in it. And with any strength program, there comes a cost. And it is those costs that I think are center point in our discussion today. And there is a lot of things that we should be doing.

But, Roger, you said something in your testimony, and that resonates with me, and that is that too often we are caught up in trying to fit defense funding, defense spending, if you will, in a budgetary box. It has got to fit some kind of a number.

I have always believed that if you are going to have true peace through strength, it has got to be based on—you said in your testimony, the strategy. I am more referred to it as the threat—the things that we are going to try to do that the National Defense Strategy commands us to do to meet the threat, known and perceived, near-term, long-term. And if it is a 3 to 5 percent real growth in defense spending that has to accompany that, then I accept that. If it is less, even better.

But I would suspect that if we are going to continue to meet a peace through strength objective, we have got to get away from trying to fit it into some budgetary framework, even though it is im-

portant, and fit it toward meeting what the perceived—known and perceived threats are. Would you not agree?

Mr. ZAKHEIM. Congressman, I think that is elemental for any strategy. The Congress has mandated that the Department of Defense put forward a National Defense Strategy. And the Congress should know what the cost is for that strategy. Going ahead as the—as we have had before with the Budget Control Act with the artificial cap, for example, which, of course, will not apply going forward but do for a number of years, really then, did not make the strategy impactful, because the Congress has stated at the outset, here is as much we are going to pay, and then much of that strategy became hollow.

So, yes, Congressman, I completely agree with your outlook that the budget really has to come after the strategy. And that does not mean we don't have to make important choices. Much of what we are discussing and others testifying are talking about are choices we are going to have to make. You can't do it all.

We have prioritized China. We prioritized great power competition. That was a key element of National Defense Strategy. Other areas will get less focus. But at the end of the day, we have committed to strategy, and we ought to resource it. That is what we owe the men and women in uniform.

MANDATORY SPENDING

Mr. WOMACK. My colleague from California, Ken Calvert, said it best in that we are always going to have to achieve a certain amount of risk. We are going to have to balance the needs of our defense strategy against the acceptable risk that we need to take. And I think we need to narrow down our focus on what is that acceptable level of risk, and that is what we rely on our war fighters and our leaders to do.

My last question is also about resourcing, and it is what I consider to be the biggest threat to our ability to do what we are all hopeful of doing, and that is protecting and achieving our constitutional objective of providing for the common defense.

And it is mandatory spending. And we spend a whole lot of time having major food fights over what we spend on national defense and what we spend on Labor H and what we spend on all—but if you look at the last 10 years of our Federal budget, the Defense, and Labor, and Health and Human Services, and all of the things that we have in our discretionary budget, they haven't grown appreciably. I mean, they have grown but in small percentages.

I mean, if you look at what we were spending on the discretionary budget, say, in 2009, the year before I was elected to Congress versus what we are spending today, I think it fits into any reasonable category of reasonable growth over time. It is the mandatory side it has.

And we spend no time, zero time in Congress talking about what to do to wrestle mandatory spending to the ground. It is growing exponentially. Ten thousand people a day are going to age into these programs. And there is no end in sight to how much more pressure it is going to put on us appropriators in trying to meet the demands that are expressed in our discretionary budget.

So to any of you, would you agree, or maybe to all of you, do you agree that Congress needs to get about the task of doing something about the mandatory side to spending to include net interest on the debt which is going to exceed \$300 billion this year?

Anybody?

Mr. ZAKHEIM. Congressman, I will jump at. I agree, and it probably won't surprise you, and the reality is that if you want to get after the debt and deficit, going after discretionary spending, whether it is defense or nondefense is not going to get you there.

Mr. WOMACK. To any of you?

Ms. MCCOLLUM. To the former chair of the Budget Committee, the other witnesses I don't think came prepared necessarily to do that.

Mr. WOMACK. Well, look, here is the deal, and then I am going to yield back.

If we are going to have a meaningful conversation about future years spending on defense or any other discretionary item, we have to be honest with ourselves that the real pressure on these programs is not the defense is spending too much money, it is that we are all being constrained by how much money is going out the door in the Federal budget versus our revenues that is having to pay for the mandatory programs that Congress has no appetite to solve, and we have to develop that appetite.

I will get off my platform and yield back. And I do have other commitment I have got to make and can't stay. But Chairwoman McCollum, Ranking Member Calvert, and to our witnesses, thank you so much for your time today.

I yield back.

Ms. MCCOLLUM. Well, thank you. But we also don't want the Ways and Means Committee to do what they did to us in Interior—both Mr. Calvert and I had to deal with it—and that is a payment in lieu of taxes. They decided not to make it mandatory to our counties and governments for payment of lieu in taxes, and instead just put it over in the Department of the Interior. And then Mr. Calvert and I found ourselves having to take that out of hide. So that is not a good solution either sometimes.

Mr. Diaz-Balart, I am going to ask you, if you would, to go next. So Mr. Diaz-Balart.

THREAT LEVEL FROM CHINA AND RUSSIA

Mr. DIAZ-BALART. Well, thank you. You are very kind. I want to first kind of really add, agree with what my colleague, Mr. Womack, just mentioned. And, you know, we always spend a lot of time because we are appropriators on discretionary—obviously, we spend so little time on, frankly, two-thirds of the spending and what is really creating all of the issues.

I obviously hope that we don't add additional new issues to discretionary because I think that not only is it a problem for our fiscal future, but it is also potentially a national security threat kind of adding to what Mr. Womack said.

To the panelists, does anybody believe that China is not a real, you know, threat and national security threat in the future of our—you know, for my child and for my kids' kids, is China going

to be less of a threat, and anybody believe that is going to be less of a threat or potentially going to be a threat?

Ms. HOWE. Congressman, I am happy to start with that. I believe that China is a long-term strategic threat on a number of dimensions, and especially in my area of expertise which is cybersecurity.

Russia is today's threats. But from a strategic perspective as we look forward, and as we look forward at the new waves of technology that are coming online, and how China is organizing globally, there is no question that they are a long-term strategic threat.

Mr. DIAZ-BALART. And, you know, thank you for also mentioning Russia. Let me add that to my question. You already answered it very succinctly. Anybody else? Does anybody think that China is not a current or future threat? And that Russia, while, you know, obviously, doesn't have the economy of China is going to somehow stop being a threat in the near future?

Mr. ZAKHEIM. Congressman, I believe that China is the threat, our peer competitor. And I actually would put them even today ahead of Russia in terms of what we have to deal with both in terms of their capability and how they are challenging us across the political, economic, and, of course, security sphere.

Mr. DIAZ-BALART. Let me, since, you know, let me kind of take back my time. If anybody disagrees that China is a threat, does anybody believe—any of you believe that China is going to be less of a threat in the future looking at how they are investing, what they are doing, or are they going to be more of a threat in the future?

Ms. SMITHBERGER. Congressman, I think it is going to depend a lot on what investments we make as a Nation across our government to manage that competition—

Mr. DIAZ-BALART. I get that we do, but I am just asking about them. Does anybody think that China is going to be less of a threat, that they are going to change their posture, and they are going to become, you know, I don't know, Switzerland? Or do you believe—do any of you believe they are going potentially less of a threat, or are they going to continue to expand, increase their military's power, et cetera?

Mr. ZAKHEIM. I think there is a consensus, Congressman, that they are going to be more of a threat, and everything they are doing reflects that.

Mr. DIAZ-BALART. Well, let me, again, if anybody disagrees with that, please speak up. But if not, because I think that is the consensus, I think, amongst most of us also.

Mr. ACTION. Congressman, can I—

Mr. DIAZ-BALART. Yes, I am sorry. Go ahead.

Mr. ACTON. Sir, just, I mean, speaking kind of from my expertise of nuclear policy, I do worry enormously about China's conventional modernization and its cyber forces.

I think nuclear policy is a bit of a different area there in which the United States is going to continue to enjoy very significant superiority in nuclear forces for what that is worth for the foreseeable future.

And I don't think that China's steady slow nuclear buildup is going to challenge that significantly for the foreseeable future.

Mr. DIAZ-BALART. But you do expect them to build up?

Mr. ACTON. Yeah, I mean the Department of Defense projects that China's nuclear forces will—sorry, China's nuclear warhead stockpile will roughly double over the next 10 years or so which would still make it round about 8 to 10 times smaller than the United States even at the end of buildup.

RESEARCH AND DEVELOPMENT SPENDING

Mr. DIAZ-BALART. No, and I get that. But I think that there is an agreement, right, I would say that there is a consensus that it is a threat, it is going to continue to be a threat, it is going to continue to be a greater threat. And we also know that China has tripled its research in R&D over the past decade while our spending has remained constant.

And so, here is the question. Is there any way that we can keep up, compete with a China—an emerging military, potentially even nuclear superpower by keeping our R&D flat, and also potentially by keeping our defense spending flat? How do we do that?

I just don't see how we can do both things. We can stay ahead of the curve while our adversaries, particularly China, is according to, I think, everybody's understanding is getting more dangerous and not less.

How can we do that while reducing spending, whether it is in basic military spending or R&D? How do we do that? Can we do that, or is it frankly just increasing our risk exponentially?

It is a rhetorical question, but I would like to hear it.

Mr. ZAKHEIM. Congressman, we have looked at that in our Project for Strategic and Budgetary Assessments. Dr. Macon testified before this committee before. The answer is no. A flat defense budget will make it very difficult to compete with China. And even if you felt that you could compete with China, you are inviting risk in other regions in the world. Russia, for example, would be the prime spoiler in that scenario which would further weaken our interest.

So even at flat levels and in making really great choices, you are inviting significant risk.

Mr. DIAZ-BALART. Madam Chairwoman, yeah, if anybody else wants to respond to that, I just want to be conscious of our time and be respectful to the chairwoman.

Ms. MCCOLLUM. Thank you so much.

So, you know, we need to be looking at a defense posture against, you know, near peers China and Russia. But we also have to realize that their governments work very different than ours do, and they don't have the citizen input that we have. And all of are us have traveled the world.

So, when they are talking about what they are doing with their defense budgets and that, they are doing so at, you know, not taking care of their population and not having public input on it. So sometimes it is nice to just talk the dollars, but we also have to remember the type of governments that our near peers have, and if that is what they decide to do, the public has and the people that they are supposed to be representing have no side in it.

A lot has been talked about defense, but I also just want to talk about the three Ds because whether it was Secretary Gates or Colin Powell, when he was Joint Chief of Staff and the Secretary

of State always talked about development, diplomacy, and defense. And sometimes their best defense is winning the hearts and minds and building more allies around the world.

I am going to take my first and second round and combine them. And then before I start asking my question, I just want to let people know the order they are up in. It would be Mr. Aguilar, Mr. Calvert, Mrs. Kirkpatrick, and then you again you again, sir, Mr. Diaz-Balart.

CYBER ATTACK RESPONSE

Ms. Howe, my first question is for you. You mentioned in your testimony that our cybersecurity adversaries, they are fast, and they are creative, they are persistent, and they are unconstrained by law or regulation. Unlike us, right, when we compare governments to governments. The add deterrence in building resilience, what is the tipping point for the DOD should respond when our government and businesses are constantly attacked? And I am putting that out because you talked about a whole of government.

Do we need to have a conversation in our democracy on how we respond as a whole of government on some of these attacks? And when is an attack on our economic system or our healthcare system or our public health—public service like water and electricity, should we be having those conversations on how to respond as a whole government?

Ms. HOWE. Congresswoman, Chairwoman, you are absolutely right, and this is a very important question. You highlight a critical issue, which is we have not developed the appropriate response deterrence policy, escalation policies with respect to cyber activity. And every time we come across another event that is where a nation state is behind it, we struggle with the question of what the appropriate response is. We need to develop those norms. We need to develop those policies. We can't do them in a vacuum. There needs to be, you know, a multilateral agreement with like-minded allies in terms of what that appropriate policy would look like.

What I would tell you is that without restoring deterrence, without using all of our tools of national power to respond to these attacks in the right way, the private sector does not stand a chance. We will not be able to keep committed nation state adversaries at bay, out of our system, out of our networks. Our governments don't stand a chance. Our critical infrastructure does not stand a chance.

You are absolutely right to say that we have to—we do not have the policies in place to—the deterrence policies in place, the escalation policies in place. That is the conversation that should be happening. And there is no question that it is complicated, but we are running out of time to do that, so it is—and this is where we need Congress' support. Again, this is only something you can do, so we would be grateful if that conversation would take place.

GROUND BASED STRATEGIC DETERRENTS

Ms. MCCOLLUM. So I noticed Mr. Cole came back. So, Mr. Cole, what I am doing is I combined my first and second round, so you will be right after me and then we will go to Mr. Aguilar.

I would like to direct my next question to Dr. Acton. Your testimony calls for a pause in the ground based strategic deterrent pro-

gram, and looking at further alternatives. But at the same time, you seem a little skeptical about the long-term viability of the intercontinental ballistic, the ICBMs, in general. Is there any scenario in which you would recommended moving forward with GBSD?

Mr. ACTON. Well, thank you for the question, Congresswoman. And I am concerned about the long-term viability of ICBMs, especially silo-based ICBMs, as all U.S. systems are. We have spoken a lot in this hearing about Russia and China. I think it is possible, indeed likely, that over the next 30 to 40, 50 years, Russia and China would develop large numbers of long-range conventional weapons that could be used to attack U.S. silos.

And the only concept we would have for then defending those nuclear weapons would be to launch large numbers of nuclear weapons in the event that Russia or China launch non-nuclear attacks against our silos. I don't think that threat is credible. I don't think we should want to put any President in that position.

Now, look, let me be honest here. You know, I don't have access to classified information. I haven't read the 2015 analysis of alternatives conducted by the Department of Defense about the new ICBM. But based on what has been reported, I think there is good reasons to want to see that analysis reviewed by an independent body.

Just to give you one example, the 2015 analysis of alternatives assumed that the United—reportedly assumed that we should retain 450 ICBMs. That requirement has already dropped to 400 ICBMs, and that matters because the fewer ICBMs we keep the more we have that are available for testing and hence the longer you can sustain the Minuteman-III force form.

So, you know, this is why I think this should be looked over, reviewed by an independent body to look at some of the options that weren't considered in the 2015 analysis of alternatives, you know, including slightly reducing the size of the Minutemen-III force as a way of keeping it viable for longer.

Ms. MCCOLLUM. Okay. Thank you. My next—I am going to go—I need to be respectful to the other members, and so I have a question for both Ms. Smithberger and you, sir, Mr. Zakheim, and it goes to OCO. So, Congress and the executive branch, how do we use overseas contingency funds? Are they ever necessary?

And with, Mr. Zakheim, when you were also talking about flat-line funding, cuts to funding, and inflationary and 3 percent and all that, when you were talking about that, how did you calculate OCO into that? Because that becomes—that is something I am looking at very seriously because some of the OCO funding has actually now become baseline funding, and some of the OCO funding then has tails that goes into the next year, so how we account for all that is really important.

So, what should Congress and the executive branch be looking at if we do anymore of these overseas contingency accounts in the future? What should they look for? Should we include tails, and how should they be strategically used? If both of you could answer that question, and then I am going to go to Mr. Cole.

Ms. SMITHBERGER. Absolutely. Thank you for the question. I think at the initial stages of a conflict when the costs are unclear,

something like OCO can be appropriate. As much as possible though, Congress should be very clear about what they want that to be used for, that there should—to the degree there is a tail to that spending, they should be asking for more transparency and reporting about what that is.

If we don't see a budget—or if we see a budget that continues to support OCO, I think you should work with the Department to let's make sure that that is only being supported—supporting things that are unexpected costs. But really the best way to improve planning and management is for the Department to not be using this fund.

Ms. MCCOLLUM. Thank you.

Mr. ZAKHEIM. Madam Chair, I agree with that. In terms of your specific question about OCO, the 3 to 5 percent growth is talking about the base budget primarily. It didn't include OCO.

Ms. MCCOLLUM. It didn't include any of the tails of OCO or—

Mr. ZAKHEIM. So to the extent that OCO fixes in, right, into the base budget, then it would be inclusive, and that is part of my point I want to add on to OCO, which is as you migrate away from OCO, which I think we should for the reasons Ms. Smithberger outlined, we have to make sure that they are migrating into the base budget and we are not just simply cutting them off, because the Department has relied on it, right, and therefore what you are essentially doing is further shrinking the base budget if it wedges its way in without seeing some top-line relief.

I also just want to add, Madam Chair, in terms of Mr. Acton's point before, just simply that the 2018 National Defense Strategy Commission did look at this issue with respect to the third leg of the triad ICBM and GBSB and felt that the Obama administration decision to move forward with the GBSB program was sound. So that was an outside review I referred to the committee.

Ms. MCCOLLUM. Well, thank you.

So, Mr. Cole, I am glad you were able to come back. Welcome.

Mr. COLE. Thank you very much, Madam Chair. I had been at the Rules Committee on War Powers Act, so this is back to back is the important set of—

Ms. MCCOLLUM. We appreciate your work, sir.

COMPETING WITH ADVERSARIES

Mr. COLE. Well, thank you very much. I don't know what I did to anger my leader, but I paid for it. Anyway, let me ask the big picture question, if I may. I came in and I heard, of course, my good friend from Arkansas' comments, which I agree with very much, also with yours, Madam Chair, that we have a different set of inputs into our defense decisions and our potential adversaries do for sure. And we also maintain an all-volunteer force, which honestly, for soldiers a lot more expensive than either of our two adversaries, and that is something we do by choice.

There is a third part of the equation we don't like to talk about very much, and that is, in the past, when we dealt with this sort of Chinese, Russian access aligned against us, we had overwhelming economic advantage over those two economies combined. That is not true anymore, and particularly, given the growth of the Chinese economy and given its projected growth going forward.

I want to ask all of our witnesses really sort of a big picture question. Given the domestic demands we have, given the manner in which we have chosen to fund our force with much higher per-person cost, and given the fact that we don't have the economic advantage over our peer competitors that we once had, you know, how realistic is it for us to maintain substantial advantage going forward over our competitors?

And I will just start, if I could, with Mr. Acton, Dr. Acton, excuse me, with you and kind of work through the panel.

Mr. ACTON. Well, thank you for the question, Congressman, and to some extent, that is kind of above my pay grade, as it were. But, you know, focusing on the nuclear aspect of this specifically, I believe that the United States can retain a very significant advantage over China and can continue to be in a situation of strategic parity with Russia while spending—while reducing the increase in expected spending on nuclear weapons.

And, you know, as defense appropriators, you are one of the few organs within the entire U.S. Government that can really consider the tradeoffs between the nuclear and nonnuclear parts of the budget, I mean, indeed, the Appropriations Committee as a whole between the defense and non-defense parts of the budget. But what I would just point out is that I don't view reductions slowing the rate at increase in nuclear spending as in any way compromising the strategic security of the United States and its allies.

Mr. COLE. Thank you.

Ms. Howe.

Ms. HOWE. Thank you, sir, for the question. From the perspective of a cybersecurity person, we have to invest in order to maintain our advantage. There is no question about that. We have to invest in technology. We have to understand the future of technology. We have to own the standards in order to manage the supply chain risk.

Next-generation encryption, investments in super-fast computing, those are table stakes, and nothing else matters if we lose that competitive edge. So I don't know what tradeoffs would need to happen in order to make the investments that are required, but for us to maintain our competitive strategic edge in cyberspace and to protect our Nation and to protect our democracy, we have to invest.

Mr. COLE. Okay. Ms. Smithberger.

Ms. SMITHBERGER. I think that we can maintain our advantage. It is certainly going to be a challenge. The pandemic has created no shortage of concerns. And I think it is important to look back to comments that General Milley made about how a lot of our strength is our national economy. So I think as we look at how to fund each of our agencies in the government, it is making sure that we are making smart strategic investments.

And I think, particularly with the many ways that the Department of Defense needs to reform, I think that it is going to be more advantageous to those reforms if we see reductions in spending. And I am concerned that if we see significant increases that we are going to continue to fund boondoggle programs that aren't going to make us safer.

Mr. COLE. Okay. And Mr. Zakheim.

Mr. ZAKHEIM. Thank you, Congressman. I believe that our political and economic system will ultimately lead us to the prosperity we expect and desire, and that ultimately it is our comparative advantage vis—vis China. What we need to do is, in parallel with strengthening our economy and working with allies because that is another comparative advantage, make sure that we continue to invest in our national defense.

Relative to everything else we spend in this country, the budget we are discussing here is a modest down payment to ensure that the Chinese or the Russians don't exploit an opportunity because they perceive us as weak or unwilling to make the investments to secure our peace and prosperity that ultimately our political system and economic system delivers.

I am bullish on us vis—vis China. It is the economic and political system that will win the day. We just have to keep pace with our security investments.

Mr. COLE. Okay. Well, thank you very much. Don't misunderstand, I am very much a hawk and very much agree with your sense of prioritization, all of you collectively, about the importance of defense.

But I also was the chairman and ranking member of Labor-H, and I can tell you, we used to use the line, "You are a lot more likely to die in a pandemic than a terrorist attack." It used to be a great line, now it is true, half a million plus in the last year.

So there are other areas of government that are going to have to be invested in, and there are things like the National Institutes of Health and CDC, and honestly, they are a fraction of the cost of what we spend in defense.

So, again, I have approached this as a hawk, but I also recognize that we have got some other challenges as well, and there are limits to the resources we have.

I think that is where you are trying to take us, Madam Chair, in terms of having a serious discussion about priorities inside our overall budget.

With that, I yield back.

Ms. MCCOLLUM. Thank you, Mr. Cole, and that is what we need to do. We need to balance everything, and we haven't even talked—we have talked about China and Russia here, but there is other adversaries that we haven't talked about, the uprising of terrorism in Africa and other parts of the world and that, and cyber fits into a lot of what those individuals are doing.

But how do we prepare for that if all of our focus is on China and Russia? And it needs to be. They are our near-peer adversaries. But we know after September 11 that people can do things that are very disruptive and very hurtful to our democracy, our Nation, and our people with a lot less expensive weapons that they figure out how to use to them, and think of all the money we have now spent on that.

Mr. Aguilar, you have been very patient to ask your second question, and you are up.

SPACE FORCE

Mr. AGUILAR. Thanks, Madam Chair. Appreciate it and appreciate the discussion.

Ms. Smithberger, Space Force is going to play an important role in protecting our vital infrastructure that we have made investments in over the past few decades; however, there is a concern that it will become another, you know, bloated and slow part of our Defense Department.

What recommendations, what best practices, what should we be looking at to avoid that type of outcome?

Ms. SMITHBERGER. Thank you for the question. And, you know, to be honest, we had had some concerns about the way that Space Force was established, that we aren't setting them up to succeed by creating a separate bureaucracy and just kind of what inherently tends to come along with that.

But I think what we need to look at is making sure that we are learning the lessons of some of these past risky acquisition systems, so how are we making sure that we are not pursuing immature technology, how are we making sure that we are adequately funding cyber testing as well for these different kinds of systems, how are we making sure that we have just a healthy culture for the organization as well.

So I really appreciate the question. I think it is going to take very vigorous congressional oversight to make sure that the Space Force is working well with the goals of the Department and being responsible stewards of taxpayer dollars.

Mr. AGUILAR. How can we do that, you know, better? How can we make sure that that connection is closer from the policy side to the implementation side with respect to budgeting and best practices?

Ms. SMITHBERGER. That is a good question. So I think as much as possible it is making sure that when we are getting—when you are getting briefings about our space capabilities that you have the various components of the Department that are focused on these areas.

And this might be something where my colleague, Dr. Acton, can weigh in on as well, but looking at—making sure that there is coordination. Certainly, a slightly different issue, but we have seen just this week on hypersonic weapons that there are concerns about duplication that is going to occur.

A lot of it is just having very clear transparency about what are we building, what are we doing, and having as much coordination as possible.

Mr. AGUILAR. Dr. Acton.

Mr. ACTON. Well, thank you for the question. I mean, very briefly, I think that everything Dr. Smithberger says about the risk of duplication in hypersonics is very true. That is not so much a Space Force issue as it is the Air Force has its systems, the Navy has its systems, the Army has its systems. I think there is cooperation between the services, but a number of systems being developed that I think is disproportionate to the potential military benefit.

On Space Force specifically, you know, look, my own area here is on nuclear command and control. I don't know if there is anybody else in the nongovernmental community who considers themselves passionate about that subject, but I do. I would just make a couple of points.

You know, firstly, I think that there are—we ought to be looking to enhance the resilience and redundancy of these systems. I think this is an area where we ought to be spending more as a country not less, especially because of the threats to these systems in a—the kind of conventional conflict that might precede a nuclear war.

And, secondly, you know, both in terms of nuclear command and control and in terms of nuclear forces more generally, I want to emphasize that cooperation in the forms of reciprocal, verifiable arms control is one of the most effective ways we have to curtail spending without compromising security, not only because it avoids getting into arms race, we have to build fewer weapons, also in the savings on intelligence because we have on-the-ground verification could be very, very significant.

I think it was one of the three Ds that Chairwoman McCollum mentioned, “diplomacy.” That has to be, in my view, part of an integrated strategy as well here.

Mr. ZAKHEIM. Congressman, could I just add two quick metrics that you ought to consider?

First, the radical in management of the Department in terms of the growth of the workforce supporting the Space Force. It is supposed to be a lean and mean organization, and Congress can, through its legislation, ensure it stays that way.

Second, rapid acquisition. We see what is going on in commercial space. There is no reason why the same investments on the government side can’t see the speed and delivery that we are seeing on the commercial side. This is not decades. It is years at most. That is a second area to make sure you are getting the bang for your buck when it comes to the Space Force.

Mr. AGUILAR. Thank you. I appreciate it.

Thank you, Madam Chair. I yield back.

Ms. MCCOLLUM. Thank you.

Mr. Calvert.

Mr. CALVERT. Thank you, Madam Chairman. That was an interesting round of questions.

I just want to make a point, that our nuclear weapons are old. We need to rework that arsenal. We have capped our number of nuclear weapons. We have talked about the arms agreements. You know, Russia never stopped in designing and building nuclear weapons and weren’t honest about what they are up to. And their nuclear weapons arsenal is the largest in the world, exceeds both the United States and China combined. And I would point out that China is rapidly building a nuclear arsenal, so it is nothing to sneeze at.

One other thing about what was brought up about Space Command, which I am concerned about, and what was brought up about the, you know, personnel within the Department of Defense and, Madam Chair, you know what I am going to say—

The numbers of people in the Department of Defense civilian workforce has never been higher relative to those in uniform, and we need to get a hold of that bureaucracy. And as fear I had with space is that they were going to change—go down that same path, so we should not let that happen.

DEPARTMENT OF DEFENSE AND THE SPACE DOMAIN

Getting back to space, that is the high ground, and if any conflict happens, I think that that is something that we need to maintain superiority at. China is rapidly gaining access to space and, quite frankly, capability, and we are losing our quantitative edge.

Last month, Todd Harrison from the Center of Strategic International Studies told our subcommittee that China is making advances in counter space weapons faster than we are, advancing our space defenses against those systems. I would ask, what is your assessment on DOD's progress in the space domain, and how do we budget properly to be prepared for this rapidly evolving threat? I would ask that for any of the panelists.

Mr. Acton.

Mr. ZAKHEIM. Congressman, I am happy to field part of that. I think it is the acquisition speed, it is the redundancy that Dr. Acton spoke about. And, I mean, you have done this on the civilian workforce writ large, but it is also ensuring that it is happening within the Space Force.

To me, those are the key areas that the Congress should be focused on, and that will challenge China. Particularly, if we are able to increase a number of satellites, smaller, cheaper, that puts great—that is a competitive cost-imposing strategy on the Chinese.

If I can on the GBSD, Congressman, just briefly, I agree with you that you need to have nuclear weapons that work, and that the problem with the service life extension on the Minutemen is that we have heard from the commander that you can't extend the life of this, that it doesn't work, and that obviously creates great danger.

Particularly in this environment, the National Defense Strategy, we lean on nuclear weapons more, as you know, in the strategy. And if we are going to have them, we have got to make sure they are going to work, and STRATCOM has told us it will not.

Mr. CALVERT. Thank you.

Mr. ACTON. Congressman, if I could weigh in on the issue on satellites. Our nuclear command-and-control satellites are in very high orbit, and right now the threats to those orbits are less than all of, you know, the low-Earth orbit satellites that are in dire jeopardy. The threat to those higher-altitude satellites is increasing, and our acquisition of antisatellite weapons won't in and of itself negate Russian and Chinese antisatellite weapons, that won't protect our satellites.

I believe that DOD should be looking at fundamentally different, more resilient architectures to defend these most valuable satellites. Just to give you one example, one of the systems we used to have for nuclear communications, something called ASATCOM involved dispersing communication transponders on very large numbers of satellites being used for other purposes, 20, 30, exact numbers are classified. That was a much more resilient system than building a few absolutely exquisite but relatively vulnerable satellites.

When I say we should be looking at new architectures, that is the kind of example of programs that I mean that I think DOD is very resistant to changing the way it has done nuclear command

and control because that is actually quite difficult to make that change.

And on GBSB, all I would say simply is that the assumptions on which previous studies into replacing the Minutemen—into Minutemen-III life extensions were an extremely restrictive set of assumptions. And I think everybody recognizes that the—you know, you can predetermine the outcome of a study by the assumptions you choose to put into it.

Mr. CALVERT. Yeah. Thank you for that.

And the last point I want to make, Madam Chair, is that Mike Griffin, our former R&D guy at the Department, made a point that our turnaround time on new satellite development sometimes is 20 years.

The Chinese are doing it in 2 years. We have to cut the time in which we start a program and launch the program enormously in order to make sure we keep up. And we are not doing that right now. We need to change the culture, and that is a difficult thing to do.

Thank you. Yield back.

Ms. MCCOLLUM. Mr. Diaz-Balart and then Mr. Cole for a second question.

SEMICONDUCTOR PRODUCTION

Mr. DIAZ-BALART. Thank you, Madam Chair.

A little while ago, I think, Roger—and, again, I apologize for using your first name—I think you talked about on-shoring, you know, semiconductors and that kind of thing.

So I just recently read, and I may be wrong, if I read it wrong, that I think Ford automobiles is—they are building—I don't know if it is their F, you know, 150 pickup trucks without the semiconductors, because they don't have enough of them, and then they are going to put them on later.

Now, that is bad enough, but when you are dealing with defense national security that is catastrophic. And so, you know, any ideas as to what we should be doing to on-shoring, you know, national security, defense-like semiconductors, which is obviously something I think you talked about, you know, the vulnerability of having a lot of them being built in places like Taiwan?

If you care to kind of expand as to some ideas as to how do we do on-shore, incentivize companies to build those semiconductors, those national security semiconductors here in the United States.

Mr. ZAKHEIM. Thank you, Congressman. Happy to talk about that. You are right that cutting-edge semiconductors are not manufactured in the United States. They have one foundry. As you go from 14 animators and down, you really have to look into Asia.

So the previous administration and this administration and this Congress has made significant investments—I am thinking of the CHIP Act here, at least it requires appropriations, so it is quite relevant to this committee, but at least the authorization to on-shore some of this capability.

And we have seen this with some of the U.S. semiconductor companies, as well as the one that gets discussed the most is Taiwan's semiconductor manufacturing company, which there is a move to invest in a foundry, I believe, in Arizona.

But the other slice of it is that we are going to have to continue working with allies. We are going to have to continue working and getting semiconductors from Korea and Taiwan, and that gets back to this committee's jurisdiction, which is to demonstrate to the Chinese that the United States is committed to the defense of Taiwan, that that is not only necessary because we are both democracies and we should support democracies, but also it is vital to the supply chain for our security and our economy.

And that is pretty much where we are at right now and why this is so critical. And we are seeing it, as you reference, outside the security context, just economically right now, Ford is having difficulty getting their semiconductors.

Mr. DIAZ-BALART. And I agree with you, and I think, you know, about your—you know, the posture towards Taiwan and to others. But should we treat semiconductors—I mean, you know, obviously, we want to—I would like to on-shore everything, right.

But there is, I believe, a difference between semiconductors, hugely important for pickup trucks, and semiconductors for our national defense.

So should we treat those differently and have a different way to, you know, to more aggressively treat those differently than we do with, you know, other semiconductors, or for that matter anything that is not defense, directly defense related?

Mr. ZAKHEIM. Well, it is interesting when it comes to the fab support to smaller semiconductors, and I don't know what size the Ford F-150 uses, but generally this is viewed as something that is needed on the commercial side as well on the security side. So it is actually a twofer when you come to think of it.

And given the capital-intensive requirements to support high-end manufacturing like a foundry for semiconductors, you are going to need a commercial market to support it. So vital to getting our security and defense needs met when it comes to semiconductors, we actually have to make it part of the supply chain for the commercial sector as well.

And that is really reflective of the overall environment we are in right now where so much of what the military needs in terms of technology are things that the private sector, the commercial sector is leading on. Semiconductors is one that gets a lot of focus because we simply have to look to Asia to source it.

Mr. DIAZ-BALART. Appreciate that.

Thank you, Madam Chairwoman. I yield back.

Ms. MCCOLLUM. Mr. Cole.

NUCLEAR MODERNIZATION AND HYPERSONIC

Mr. COLE. Thank you.

Mr. Zakheim, I understand you are part of the 2018 National Defense Strategy Commission. Obviously, one of the things you looked at was nuclear modernization, so a couple questions.

One, do you think there is any reason to think we need to do anything different than that commission outlined.

Two, do you have any concerns—and this may be a very elemental question—about the fact that both Russia and China still continue to manufacture nuclear weapons? We seem to just simply

rework the nuclear weapons that we have. And I know Mr. Calvert touched on this a little bit.

I understand from a previous hearing, it would be very difficult for us to actually make from scratch, if not impossible right now in any short period of time, a nuclear weapon. Does that give you any pause for concern looking forward?

Mr. ZAKHEIM. Thank you, Congressman Cole. And, yes, I think the 2018 National Defense Strategy Commission language on nuclear weapons, in particular the triad and GBSD stands. The strategy demands it. Because we are simply focused so much on China, we have to rely even more than previously on the deterrent.

We have our limitations. We have our reasons why we don't test, for example, nuclear weapons. The Commission didn't say we should revisit that. What it did say is that we should reinvest in the design, understanding, and modernizing.

And it is simply dangerous to rely on something that was put out there in 1970. That people understand the designs, should they actually have them, are not alive.

I think the rationale for the triad remains strong. We do need the GBSD, the ICBM because there are vulnerabilities that it addresses that the other legs of the triad do not.

And we should go ahead and modernize for the safety of the American people and the cities in which these silos reside and for the deterrence it brings us and our allies in Europe and Asia.

Mr. COLE. Okay. Thank you.

Dr. Acton, I know you know a great deal about hypersonics. It is an area that I think we have allowed ourselves to get behind in. But I am particularly interested in not just the offensive capability, but, you know, you have raised the danger of hypersonic attack on land-based silos.

What kind of defensive possibilities do we have in dealing with hypersonics? I know I have seen—Fort Sill is in my district, the air defense artillery station there. There has been some—at least beginning work on lasers. How close are we to having any kind of reasonable defense against a hypersonic attack?

Mr. ACTON. Thanks for the question, Congressman. I would distinguish here between point defenses and area defenses. So, area defenses are systems like the ground-based midcourse system deployed in California and Alaska. Those are—you know, those are intended to defend very wide areas. Conceptually, they are a bit like defensive linemen in football trying to knock down the ball just after it leaves the quarterback's hand.

You know, those kind of area defenses against hypersonic weapons are extraordinarily difficult. I would point out, they are also extraordinarily difficult against normal ballistic missiles. You know, our defenses are not designed to intercept Russian or Chinese ICBMs. They wouldn't have the ability to intercept Russian or Chinese hypersonic weapons. Obviously, if those hypersonic weapons were conventionally armed, that would represent a qualitatively new threat facing us.

The good news is, I am a lot more bullish about point defenses. This is like your cornerbacks at football trying to intercept the ball just before it lands in the wide receiver's hands. They can only intercept a small area. They are expensive as a result.

But, you know, systems like that have been shown to have a pretty good effectiveness against ballistic missiles. Hypersonic weapons generally move slower than ballistic missiles of the same range.

You know, you can't just point that at a hypersonic weapon and hope it would work. You have to modify the system. But the very, very intent heat signature of a hypersonic weapon is something that an infrared seeker interceptor can lock on to.

So, yeah, I am moderately bullish about this. I think this is an area in which DOD is already spending quite a lot on hypersonic defense. I think for point defense is that investment is a worthwhile one.

It is not going to be a silver bullet, but when you combine it with hardening, dispersal, you know, my net assessment is that Russian and Chinese conventional regional hypersonics don't really increase the threat we face relative to the ballistic missiles that they already have, especially if we make good investments in defenses, active and passive.

Mr. COLE. Well, thank you, Dr. Acton, for speaking in football analogies. That is something those of us in Oklahoma actually grasp and understand much more quickly, so that was very helpful to me.

Mr. ACTON. Yeah, I have to thank my wife for that. You can probably tell by my accent, I didn't grow up with that.

Mr. COLE. Well, I was going to compliment you. You clearly have mastered it.

Chair, I yield back.

Ms. MCCOLLUM. Well, we could always do hockey from my part of the world. I just want to thank the panelists. We had you here today to make us think about us and some of the tough decisions we are going to have to make, and you put a lot of homework on our plate.

So here is some of the things that my takeaway from this is: One, we need to really work with the authorizers and with the Department of Defense and with this administration for this upcoming budget cycle to get a clear focus on the mission of the Space Force and make sure that there is transparency in it.

When it comes to the overseas contingency accounts, and this is something we have all hungered for, I think, as appropriators, transparency, clean accounting, and understanding where the tails are that bind us up into the future.

When it comes to workforce, working with maybe Mr. Cole's committee on how we get a workforce in cybersecurity and how we get the whole-of-government working on it and understanding when an attack on cybersecurity is an attack on us as a nation state.

Coming up with this idea of like a new DARPA where we can have people from cybersecurity both come in and come out and use their talent and everything. It was just great. Now, some of this isn't necessarily in appropriations; it is working with authorizers and people in whole-of-government.

The whole supply chain, I mean, the pandemic, again, brought this up. So, whether it is semiconductors or PPE, right, that puts a vulnerability here at home.

And then the discussion on nuclear from everybody has been fascinating. It is how many, what kind, and what really resonates as a deterrent, and what do we do to defend ourselves against these issues. But for me, there is also tails on that, and maybe that is in the Department of Energy's account, but I think it also starts falling in the Department of Defense, storage, maintenance.

These are not, you know, weapons that you can just put down, put in a locker, lock it up and guard it. There is a lot that goes into this that has a lot of expense for future generations. It is the tails that we live for future generations.

I just want to thank you again, Ms. Howe, Mr. Acton, Ms. Smithberger, and Mr. Zakheim. It was a fascinating discussion, and I think it is one that we need to have because we are going to be making, as Mr. Cole and others pointed out, some really tough decisions. So I thank and each and every one of you for giving us a lot, a lot to think about.

And with that, Mr. Calvert, I am going to conclude the hearing unless there is anything you want to add really quick at the end?

Mr. CALVERT. I just want to thank you for the hearing, Madam Chair. Obviously, we have near-term, long-term challenges, and this is a good hearing to try to understand that better. I can't think of anything more important. Thank you.

Ms. MCCOLLUM. Yes. Thank you.

So, with that, thank you again to each and every one of the panelists and for the committee members who were able to come in and out.

And with that, this subcommittee stands adjourned.

[Answers to submitted questions follow:]

[CLERK'S NOTE.—Questions submitted by Mr. Ryan and the answers thereto follow:]

Question. Ms. Howe – You advocate for the establishment of a Cybersecurity Civilian Corps modeled after the Civil Air Patrol or Volunteer Firefighters. Don't we already have that with cybersecurity professionals in the National Guard? Would it be better to bolster the Guard's capabilities or do you think we need both a Civilian Corps and Guard professionals?

Answer. First, a detailed proposal for a United States Cybersecurity Civilian Corps was written by my colleagues Peter W. Singer and Natasha Cohen of New America in 2018 and much of my suggestion leverages their work.

The National Guard has successfully leveraged civilian talent to build cybersecurity capability within its ranks to both defend its own networks as well as provide support when called into service by states or the federal government. The idea of a Cybersecurity Civilian Corps is not to displace the National Guard or its mission, but to provide capabilities that the National Guard cannot by virtue of the active duty military's limited legal ability and technical expertise in defending civilian networks. While National Guard can swing between State Active Duty (SAD), Full-Time National Guard Duty (Title 32) and Active Duty (Title 10), there are legal limits with respect to activities they can undertake beyond governmental networks, as they are fundamentally military units. As such, a Civilian Cyber Corps would serve a function that the National Guard simply cannot.

More importantly, the National Guard does not solve the fundamental lack of human capital problem in the cybersecurity industry, especially when there is a widespread incident impacting tens of thousands of organizations simultaneously as we are experiencing right now. Given that it is part of the U.S. military, the National Guard limits who can join, with physical fitness, college degree, citizenship, and age qualifications and limitations, as well as a security clearance requirement. These limitations will disqualify large portion of the cybersecurity workforce who would otherwise be motivated to serve their nation and their communities during times of crisis. A Civilian Corps, could tap (a) older and retired cybersecurity professionals, (b) professionals working in the cybersecurity field, interested in aiding the public good beyond their own particular company or clients, (c) people with experience or expertise who have transitioned to other fields, (d) IT professionals who are not interested in full time cybersecurity employment (such as "white hat" hackers, who presently participate in bug bounty programs during their free time); (e) people who are in job transition; (f) independent contractors looking to fill gaps in their time and expand their networks; and even (g) stay-at-home parents. Removing the physical fitness, citizenship, age, and clearance requirements creates the opportunity to tap a vast pipeline of talent closed off to the National Guard.

Legislatively, the idea of a Civilian Cyber Corps builds on bipartisan proposal for a National Emergency Technology Guard (NETGuard) that was in the Homeland Security Act of 2002, which would work as a reference point for establishing the US Cyber Civilian Corps. This would be an auxiliary program most likely housed at DHS/CISA, which would provide the leadership, coordination and training required to maintain such an organization.

Question. Dr. Acton — You mentioned a possible reduction of the Minuteman III force in your testimony. I've had conversations with Strategic Command, and they insist that 400 ICBMs are the minimum number necessary to create a targeting dilemma. How many missiles do you think are necessary to preserve this dilemma?

Answer. The question of how many ICBMs are needed to create a "targeting dilemma" for Russia is not primarily a military one. It requires a political assessment of Russia's willingness to run risks in a conventional conflict. While Russia could become very desperate in such a scenario, attacking the U.S. ICBM force would risk nothing less than the continued existence of Russia as a state. Accordingly, I believe that such attacks would continue to be a deeply unattractive prospect, even if the United States reduced its ICBM force to, say, 200 missiles.

Moreover, the dilemma facing Russia depends more on the location of U.S. ICBMs than on their number. It arises largely because, if Russia launched its ICBMs simultaneously, some U.S. silos would inevitably be destroyed before others. (Alternatively, if Russia planned its attack so that U.S. silos were destroyed simultaneously, the launches of Russian ICBMs could not be simultaneous.) If necessary, the United States could exploit these time lags to launch surviving ICBMs. Accordingly, if the United States reduced its ICBMs while ensuring that the remaining missiles were spread over as wide area as possible, the challenge facing Russia in destroying the U.S. ICBM force would not diminish much.

As I said in my testimony, however, I continue to believe that the risks of maintaining launch-under-attack options outweigh the benefits. If U.S. Strategic Command believes that the United States cannot safely abandon such options today, then Congress could ask it to identify the changes (particularly to nuclear command and control) that would be needed so we could.

Question. Ms. Smithberger - In your testimony you argue that the overseas contingency operations account should be eliminated. If we find ourselves in a future conflict with a near-peer threat, do you believe the costs should be funded in the base budget? Doesn't eliminating the account entirely reduce our options for funding future contingencies?

Answer. No, eliminating the overseas contingency operations account does not prevent us from funding future contingencies. The base budget already includes a significant amount of money for addressing near-peer threats as identified in the National Defense Strategy. Historically the United States has only used emergency or supplemental spending in the initial years of a conflict. Furthermore, Congress and the president have repeatedly demonstrated the ability to pass emergency supplemental bills to address unforeseen needs, including recent COVID-19 relief bills.

Question. Mr. Zakheim – You mentioned that a flat budget is essentially a budget cut for the Department of Defense. Assuming this committee were to pass a flat budget for fiscal year 2022 and beyond, what strategic capabilities would be put most at risk? What potential consequences might we face?

Answer. Mr. Zakheim did not provide a response for the record.

[CLERK'S NOTE.—End of questions submitted by Mr. Ryan.]

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CYBERSECURITY AND THE NATIONAL GUARD

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MINUTEMAN III

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OVERSEAS CONTINGENCY OPERATIONS

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FLAT BUDGET

Question. Mr. Zakheim – You mentioned that a flat budget is essentially a budget cut for the Department of Defense. Assuming this committee were to pass a flat budget for fiscal year 2022 and beyond, what strategic capabilities would be put most at risk? What potential consequences might we face?

Answer. The President's \$715 billion dollar proposed budget is not the disaster scenario of the 10% cut proposed by some members of Congress, but it does not represent the 3-5% net growth needed to execute the National Defense Strategy. The proposal represents a functional cut in defense spending after accounting for inflation. Our readiness and modernization accounts are likely to shrink in a flat budget as other budget lines like personnel and O&M accounts will still require real growth consuming a bigger portion of the total spending.

This budget will be especially damaging to the Navy's ability to maintain a global presence while effectively deterring China. The eight ships, only four of which are combatants, requested by the budget will be more than offset by the decision to inactivate 15 ships. At a time when we desperately need to be growing our fleet, the President's budget will shrink our navy. China by comparison will have 420 WARSHIPS BY 2030.

Though the White House's announcement has emphasized a prioritization of research and modernization over procurement, many of the suggested cuts to legacy systems by the President's budget will not survive the congressional NDAA and appropriations process. This will stymie the already modest reallocation attempts to invest in big innovation categories like AI, autonomy, or robotics.

Though cuts to legacy systems like the A-10 are critical, they must be replaced with real capabilities that will be deployable in a short timeframe. We must preserve a force structure capable of meeting near term threats, as well as future contingencies."

[CLERK'S NOTE.—End of questions submitted by Mr. Ryan.]

THURSDAY, APRIL 15, 2021.

UNITED STATES SOUTHERN COMMAND

WITNESS

ADMIRAL CRAIG S. FALLER, COMMANDER, UNITED STATES SOUTHERN COMMAND

OPENING STATEMENT OF MS. MCCOLLUM

Ms. MCCOLLUM. Good morning. This subcommittee is going to be receiving testimony from the U.S. Southern Command. Our witness is SOUTHCOM Commander Admiral Craig Faller.

Admiral Faller, welcome back to the subcommittee. We look forward to hearing your testimony.

Today's hearing is the first of several this subcommittee will hold with geographic combatant commanders to discuss national security challenges we face around the world and to look to see how each command is postured and has the resources it needs to meet these challenges.

The President—and it is called the “skinny” budget, right? It describes the need to counter the pacing threat from China as the Department's top challenge. As we await the full budget, though, we are going to continue to move forward with these hearings.

In the SOUTHCOM area of responsibility, influences of foreign actors and drug cartels has increased. Russia and China, with their meddling in Venezuela, have also created challenges. China has taken advantage of the COVID-19 pandemic to gain influence. I want to hear from our witness about the destabilizing activities in the region and SOUTHCOM's response.

At the same time, we need to be mindful that many of the challenges we face may require diplomatic or economic responses rather than a military one. We need to be smart about using all the tools that are at our disposal—development, defense, as well as, I think most importantly, diplomatic.

One of the things that makes the SOUTHCOM area of responsibility different than other combatant commands is the proximity to the United States. Events in the region can have a direct impact on the United States and our friends and allies.

And there are numerous examples of this. Venezuela has completely broken down. That country's economic and political system has displaced millions and created instability in the region. Thousands of Venezuelans have fled to the United States. Last month, the Biden administration recognized this humanitarian situation and extended temporary protective status to thousands residing here.

The turmoil in Venezuela has created a haven for transnational criminal organizations, who thrive in a lack of government and security. Criminal organizations continue to traffic record numbers of

drugs into the United States while also engaging in human smuggling and trafficking.

In Central America, economic and security conditions, combined with extreme weather events made worse by climate change, continue to cause thousands to migrate north. And, as we know, the region has been hit hard by COVID-19, straining healthcare systems and economies and creating instability, particularly in Brazil.

We will be looking forward to hearing today how Southern Command is postured and resourced and is ready to play its part in addressing all these issues. We also look forward to hearing how SOUTHCOM is working with partner countries to address our common challenges.

And, finally, we will discuss the detention facility at Guantanamo, Cuba. We know that the Biden administration has launched a formal review of the detention facility, with the aim of finally closing it before President Biden leaves office. And that is something I strongly, very strongly, support.

So, with that, I want to thank everyone for participating in today's hearing, and I will now recognize the distinguished ranking member, Mr. Calvert, for his remarks.

OPENING REMARKS OF MR. CALVERT

Mr. CALVERT. Well, thank you, Chair McCollum. I appreciate that introduction.

Admiral Faller, welcome back to what we understand will be your last appearance before the subcommittee. We deeply appreciate your service and all the men and women who serve under your command.

I appreciate the chair calling this hearing. As the Admiral knows, SOUTHCOM AOR is of keen interest to me and members of both sides of the aisle, especially since I am from a border State and understand some of your challenges.

Many of us have felt that your command has been under-resourced relative to your needs, particularly my colleagues Mario Diaz-Balart and Henry Cuellar, which is an issue that we sought to address in last year's bill.

More broadly, the chaos on our southern border reminds us of the perils of taking our eye off the ball and allowing our own hemisphere to become a victim of strategic neglect here in Washington. I hope your testimony will be a needed correction to that mindset.

For example, I am struck by your stark assessment that the hemisphere is under assault from criminal organizations and that imminent action is needed if we are to effectively discuss China's corrosive but growing influence there. Much of this task will fall to others in the interagency, particularly the State Department and USAID, but SOUTHCOM has a critical role to play in countering threats to the homeland and helping to strengthen the security of our partners in the region.

In your testimony, I hope you will identify SOUTHCOM's most serious resource constraints, including with respect to your long-standing requirement for persistent ISR.

I look forward to the testimony and dialogue to follow.

And, with that, Madam Chair, I yield back.

Ms. MCCOLLUM. Thank you.

Well, today, we have the honor and the privilege of being joined by Ms. Granger, who is the full ranking member of the Appropriations Committee.

And, Ms. Granger, I believe you were the first woman ever to lead this Subcommittee on Defense.

Welcome.

REMARKS OF MS. GRANGER

Ms. GRANGER. Thank you very much. Thank you.

And thank you, Admiral Faller, for being here. It is good to see you.

SOUTHCOM is an extremely important area of operation that frequently doesn't get the priority it deserves because of conflicts in other areas of the world. It has been and will continue to be a priority of mine.

The crisis on our southern border is just the most recent reminder of how critically important the region is to the security of our own country. I have seen for myself on many visits to the border and to the region that this is not a new problem we are trying to solve.

We have tried many times to address the reasons why people decide to make the dangerous journey from Central America to the United States. Despite well-meaning efforts going back decades, we have not found the right formula for lasting success. And, unfortunately, some of the changes made by the previous administration to stem the flow of migration have now been reversed.

I hope this administration will consult with our partners in the region, as well as this committee, to understand the lessons that have been learned in the past to ensure that our efforts produce better results.

I look forward to your views on other pressing challenges, including China's growing influence in the region. I also hope you can speak to some of our successes in your area of responsibility, including expanding and deepening our key partnerships in the region, such as Costa Rica and Colombia.

This hearing is typically classified so that we can gather the full picture of what is going on in the region. While this hearing today is open to the public, I hope it will not prevent you from giving us full answers. I encourage you to provide classified responses in writing if you can't respond to the questions members ask today.

And I thank you again for your service, and I look forward to your testimony.

And I yield back.

Ms. MCCOLLUM. Thank you. Thank you, Ranking Member Granger.

I was going to mention the fact that this is an open hearing. If something is classified, Admiral, please let us know and we will arrange to have those answers done. Because we are living in the age of COVID, we needed to keep these combatant command hearings moving forward as we await the full budget. There is no time to waste. And a lot of what we can discuss can be done in open session.

The staff, both Democratic and Republican staff, are working together to figure out how we can do classified briefings. I spoke with

Chair Schiff yesterday. They had their first classified briefing in the Intel Committee, and it was a little bumpy, as they all can't be in the room together. We are working that out.

And if somebody has something that is of a classified nature for an answer, sir, feel comfortable in saying so, and the staff will work to accommodate that those answers are not only provided to the member but to everyone on the full committee.

So, with that, I am going to ask a question on climate change before we turn to the ranking member. The reason why I am going with climate change is that it affects not only what we need to be doing to secure our assets and build resiliency into them but also through the response that you have in facing issues with responding to disasters and the instability that climate change causes.

We know in Key West, for example, it is particularly vulnerable to climate change, and you do have some plans moving forward down there. Guantanamo Bay is another area that is out there, very vulnerable, as well as some of the response that you have now had to focus things on and missions on because of climate change.

Could you talk about climate change as a national security issue, not only for the immediate effects of your command but for the disruption it causes in the area?

Admiral FALLER. Well, thank you, Madam Chair and Ranking Member Calvert and distinguished members of the committee. And we will get right into questions. In the interest of time, I had an opening statement that I will just submit for the record. You wanted to proceed, I am ready to dive in. Whatever you want to do, Madam Chair.

Ms. MCCOLLUM. We would like to hear your opening statement. We do have time. If you want to redact a little bit, that is fine. And that is on me. That is my apology—

SUMMARY STATEMENT OF ADMIRAL FALLER

Admiral FALLER. It is quite all right.

But thank you all. Madam Chair and Ranking Member Calvert and distinguished members, it is a real honor to testify today.

Now more than ever, I feel a deep sense of urgency that our region is under assault from a vicious circle of threats. And these are global threats, and they are right here, right now, in our neighborhood.

And the Western Hemisphere is our home. It is our shared neighborhood. And a number of you have talked about that proximity and how it matters. And in the Interim National Security Strategy, we saw that it was designated as a hemisphere of vital national interest to the United States.

The INDOPACOM commander recently testified that China is the number-one strategic threat of the 21st century, and we see that in this hemisphere every day.

I would like to address a few myths that I hear and do some myth-busting at the start of this hearing.

One myth that I often hear is that China's interests in the Western Hemisphere are primarily economic. The Chinese Communist Party, with its insidious, corrosive, and corrupt influence, seeks global dominance. And that runs from Taiwan right here into our

neighborhood. And our strategic approach for China as a nation and as a whole of nations together must be global as well.

They have over 40 port deals in work. They are dishing out significant loans for political and economic leverage. They are pushing IT infrastructure. And they are engaged in an array of predatory practices, such as illegal, unregulated, unreported fishing, all with little or no concern for human rights, the environment, or the rule of law.

The second myth is that transnational criminal organizations are just drug traffickers and only a law enforcement problem. To be clear, it is our assessment that the transnational criminal organizations, or TCOs, pose a direct threat to our national security. They traffic in arms, humans, drugs, and they claim tens of thousands of lives each and every year here in the United States and in our partner nations. They undermine democracy. Their murderous tactics have resulted in 43 of the 50 most violent cities being in our hemisphere. And they drive illegal immigration and allow bad actors like China to gain influence.

Myth three is that the United States military or partner-nation militaries have no role to play with these threats. Our role is a supporting role for sure, but the professionalism of our United States military men and women is an example that our partners seek to model each and every day. And we do that through our education and training programs, our exercise programs, and our humanitarian assistance, to name just a few.

We have established programs that help partner nations develop and implement respect for the rule of law and human rights. And our programs, as is our equipment, are corruption-free. And when you work with the United States, you work on a relationship, not a client relationship. We provide not only positive role models but the tools and strategies for them to implement them, enhancing their capacity and making us all stronger together.

Underpinning these national security threats is growing fragility in the region. COVID-19 has hit the hemisphere hard. According to the IMF, the economies of Latin America and the Caribbean shrank by 7.4 percent in 2020. The impacts of the pandemic will alter the hemisphere for years to come. And in the midst of the pandemic, two back-to-back major hurricanes devastated Central America, creating even greater instability.

The pandemic and these unprecedented storms struck on top of the vicious circles of threats that I have highlighted, creating strong push factors for the people of the region to head north in search of safety and basic needs for their families.

In Venezuela, despite an economy in tailspin and more than 5 million refugees that have fled the country, the illegitimate Maduro regime continues to cling to power, with support from Cuba, Russia, Iran, and China.

We can't face these daunting challenges on our own. The only way to counter these threats is to strengthen our partnerships, and that is how we will win the strategic competition. No one nation is as strong as all of us working together.

And I have been impressed by the nations who have worked shoulder-to-shoulder with us in countering threats to our neighborhood. For example, last year, Colombia brought together more than

two dozen nations in Operation Orion VI to conduct a counter-transnational-criminal-organization operation. And earlier this year, Brazil became the first Latin American country to send forces to our high-end U.S. Army training in Fort Polk, Louisiana.

Good neighbors are here to help when you need them most, especially during a crisis, and during this pandemic the United States Southern Command stepped up. We provided humanitarian assistance to our partners when COVID struck, and we did it with the speed of relevance, delivering field hospitals and critical PPE. To date, we have executed 498 projects in 28 countries, with a total investment of more than \$70 million. And this investment, thanks to your support, is making a difference.

SOUTHCOM works every day to build the readiness and professionalism of our trusted military partners and security partners. Modest investments in intelligence, surveillance, and reconnaissance, security cooperation, and presence go a long way in the hemisphere and will help us and our partners counter these global threats.

Finally, our successes would not be possible without our most important resource: our people, our SOUTHCOM team. And we are taking proactive steps to protect our people from unacceptable behaviors like sexual assault and harassment, racism, and extremism. We take these threats seriously because it is the key to readiness and it is the right thing to do.

Madam Chair, Ranking Member Rogers, on behalf of the SOUTHCOM team, thank you for your trust. I look forward to the questions and discussion today.

[The information follows:]

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STATEMENT OF
ADMIRAL CRAIG S. FALLER
COMMANDER, UNITED STATES SOUTHERN COMMAND

BEFORE THE 117TH CONGRESS
HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE

APRIL 15, 2021



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Over two years ago, I was entrusted with the great responsibility of leading the men and women of the United States Southern Command (USSOUTHCOM) in working with our partners to secure our hemisphere. At the time, our region faced a seemingly insurmountable crisis of illicit drugs killing tens of thousands of Americans every year, institutional instability and corruption in the region, and external state actors (ESA), like the People's Republic of China (PRC), looking to exploit the conditions posed by these threats. I committed to tackling these challenges by building trust with the nations of this region and within our own interagency – by being the best partner we can be and by strengthening and complementing U.S interagency and partner nation capabilities to address these threats together. With your support, we have made notable strides, but much work remains to be done. I welcome this opportunity to discuss the significant national security challenges and opportunities we still face in Latin America and the Caribbean. This region is our neighborhood, directly tied to us in every domain. A threat to our neighbors is a threat to the United States; and an opportunity for our neighbors is an opportunity for us to make our neighborhood stronger together.

In fact, after two years in this position, I feel an incredible sense of urgency. This Hemisphere in which we live is under assault. The very democratic principles and values that bind us together are being actively undermined by violent transnational criminal organizations (TCOs) and the PRC and Russia. We are losing our positional advantage in this Hemisphere and immediate action is needed to reverse this trend. The intervention goes well beyond economic influence, the PRC's strategic outlook with over 40 ports in progress, significant loans that are used as political leverage and predatory practices demonstrated in illegal, unreported, and unregulated (IUU) fishing are weakening democratic institutions and leveraging the future of this Hemisphere. We have seen many of these same tactics in Asia and Africa over the last few

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decades and we are well aware of the results. We must act now to avoid those same results in our own hemisphere.

Strategic Environment

The National Defense Strategy (NDS) identifies defending the homeland as a critical defense objective and recognizes that our homeland cannot be safe without a stable and secure Western Hemisphere. USSOUTHCOM's primary mission is to keep our neighborhood safe from those seeking to do us harm so that our home remains secure. The threats in the Western Hemisphere are persistent, they're real, and they represent a formidable risk to our national security. Perhaps most urgently, this region has been one of the hardest hit by COVID-19; the health, economic, and social impacts of which will alter the hemisphere for years to come. In the midst of this pandemic, two back-to-back major hurricanes devastated Central America creating even greater economic strain. The pandemic and these unprecedented storms struck on top of an already challenging vicious circle of threats that jeopardize a secure, stable, and democratic Western Hemisphere. These threats include ESAs like the PRC, Russia, and Iran that actively seek to take advantage of the nascent, fragile democracies in this region and look to exploit the region's resources and proximity to the United States; TCOs that run all forms of illicit activities to turn a profit, at the expense of the rule of law, and more importantly, of the lives of all who are impacted along the way; and malign regional state actors – those countries within our own neighborhood, like Cuba, Venezuela, and Nicaragua, that perpetuate corruption and challenge freedom and democracy by opening the door to ESAs and TCOs at the expense of their own people. TCOs are a direct threat to the U.S. homeland. We cannot face such daunting challenges on our own. The only way to counter these threats is to strengthen our partners in the

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region – we must build OUR team to win this strategic competition. If our neighbors are stronger, we're all stronger.

Threats and Opportunities

COVID-19 and Fragility in the Hemisphere. There is an accelerating spiral of instability gripping the region as the pandemic has increased the region's fragility. Latin America and the Caribbean have suffered among the highest COVID-19 death rates in the world, and during my trips to the region, I witnessed the profound physical and emotional strain nations are experiencing. With only about 8 percent of the world's population, Latin America and the Caribbean are disproportionately impacted with nearly one fifth of global cases. Though nothing compares to the toll on human life, there will also be a significant socioeconomic impact on our neighbors for years to come. According to the International Monetary Fund (IMF), per capita income in Latin America will not recover from the pandemic until 2025 – later than any other region in the world. Coming on the heels of widespread public protests against governments throughout the region at the end of 2019, these COVID-19 losses coupled with longstanding socioeconomic grievances and corruption have created the conditions for even greater instability and unrest among our partner nations. These conditions create a more fragile region that serves as fertile ground for our competitors to advance their own interests, both malign and legitimate, making this challenge even more complex. Even some of our strongest partners are at risk of instability due to this confluence of factors.

Our partners' military and security force budgets are facing extreme pressure as governments use their limited resources to address the pandemic. Security forces are increasingly focused on the very near-term need for tactical items such as fuel, food, personal protective equipment (PPE), and vaccines at the expense of security operations. They are

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concerned that TCOs will gain even more freedom of action in their countries as conditions for corruption and illicit activity grow.

In order to gain more access, presence, and influence in the region, the PRC and Russia are taking advantage of the pandemic, deploying medical diplomacy and disinformation campaigns – often overpromising and under delivering. The PRC is offering \$1 billion in loans to the region for their COVID-19 vaccine and improvements to medical infrastructure, securing agreements with Argentina, Brazil, Peru, and Venezuela. This will further indebt the region to the PRC, which already holds \$165B in loans. The PRC aims to enhance medical exchange programs, exploiting the pandemic to advance its One Belt One Road (OBOR) initiative in trade, technology, and infrastructure. Beijing is also using COVID-19 as a pretext to donate Huawei technology that integrates with its 5G networks and Safe City programs – touting its social monitoring model as an effective and inexpensive contact tracing solution.

Russia, too, is seizing the pandemic as an opportunity to increase its influence in countries where it previously had limited access. COVID-19 has also provided Russia with another avenue by which to expand its campaign to outcompete the U.S. in the information domain, pushing narratives about U.S. mismanagement of COVID-19 and claiming U.S. government sanctions are choking the Venezuelan people at their most vulnerable time.

What we're doing about it: Good friends are consistent and committed. While maintaining force health protection as a priority, USSOUTHCOM immediately responded to the needs of our partners in this crisis by providing humanitarian assistance to alleviate the burden on health systems throughout the region. Since April 2020, USSOUTHCOM has executed over 485 of these projects in 28 countries, with a total investment of more than \$56M, in addition to

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the humanitarian assistance delivered by State and USAID. Our efforts range from deploying field hospitals to providing critical PPE.¹ The U.S. government has delivered \$226 million worth of aid, with an additional \$35 million on its way, which is more than double what the PRC has donated. As part of overall U.S. government humanitarian efforts, DoD's humanitarian assistance program is making an important difference in these nations and helping to build trust and bring stability to the region. In every conversation with my counterparts in the region, they lead with "your assistance has been critical as we face COVID-19." If the U.S. wants to be the partner of choice – that means being first to respond in a crisis. Missions like the 2019 deployment of the USNS COMFORT provided world-class medical care to over 68,000 people in 12 countries and enhanced the medical readiness of our US and partner medical personnel. We work closely with State and USAID to find innovative ways to deliver this kind of relevant and timely support to our partners and demonstrate our commitment to the region.

External State Actors (ESAs) and Malign Regional Actors.

People's Republic of China. The NDS's central idea of "expanding the competitive space" must be applied globally, not only in the Pacific, but also in our own neighborhood. The NDS requires us to "sustain our advantages in the Western Hemisphere" and maintain a favorable balance of power in this region, while bolstering partners against coercion.

The PRC continues to increase its self-serving activities to gain global influence and leverage across all domains in the USSOUTHCOM AOR: cyber, space, extractive and energy industries, transportation hubs, roads, infrastructure, telecommunications, legal and illegal fishing, agriculture, and military training – Spanish and Portuguese-language military education

¹ Only PPE that was available within the partner nation or for purchase from a third party were donated due to the simultaneous shortage we faced in the United States.

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modeled after U.S. professional military education. The PRC is also “gifting” security supplies and equipment as a way to gain access and win favor with regional security forces. As already discussed, COVID-19 has brought on a new era of medical diplomacy that the PRC seeks to leverage to its advantage. All of these overtures, to include the OBOR initiative, are part of a concerted effort by Beijing to indebt fragile countries in the region, impinge on our partners’ and allies’ sovereignty, and use its influence to extract concessions when needed. The PRC also thrives on and enables the corruption and lack of transparency in business and political deals exhibited in some of the countries of Latin America and the Caribbean. Beijing pairs these engagements with aggressive information operations that spread disinformation – emblematic of how the PRC’s actions are guided by different values than those of the U.S. and our regional partners.

The PRC is rapidly advancing toward their goal of economic dominance in the region within the next ten years. In 2019, the PRC surpassed the U.S. as the leading trade partner with Brazil, Chile, Peru, and Uruguay and is now the region’s second-largest trading partner behind the U.S. From 2002 to 2019, PRC trade with Latin America soared from \$17 billion to over \$315 billion, with plans to reach \$500 billion in trade by 2025.

The PRC is also seeking to establish global logistics and basing infrastructure in our hemisphere in order to project and sustain military power at greater distances. Outside our region, Beijing consistently abuses commercial arrangements at host country ports to support military functions and obfuscate the true purpose of its overseas installations.

Chinese Illegal, Unreported, and Unregulated (IUU) fishing just outside or within the outer limits of South American Economic Exclusion Zones (EEZ) is another predatory practice

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that poses a threat to the livelihood of coastal nations. The Chinese government admittedly subsidizes this activity and is reluctant to curtail it because of its importance to PRC's food security and economy, with IUU fishing costing the region about \$2.7 billion in lost revenue annually. In August, activity of a fleet of approximately 350 Chinese operated vessels posed a threat to the Galapagos Marine Reserve and endangered species resulting in an international outcry, exposing this malign activity.

Russia. Russia is increasingly asserting itself in Latin America and the Caribbean, pursuing a strategy intended to grow Moscow's influence and undermine U.S. leadership in the region over the long term. Russia is actively engaging in this region to counter what it views as the U.S. meddling in its near-abroad. Expanding air and sea access to project military power, it has agreements with Venezuela and Nicaragua that allow Russian warships to visit on short notice. Moscow has executed three strategic bomber deployments to the region since 2008 and made more than 40 port calls since 2010. Russia doubled its naval deployments in this region, going from five (2008-2014), to 11 (2015-2020). Russia is trying to make inroads in the hemisphere by providing security training and has conducted \$2.3 billion in weapons and military equipment sales in the last 10 years. At the same time, Moscow is working to discredit the U.S. by flooding the region's information space with disinformation, to include hundreds of articles distorting U.S. security actions. In 2020, Russian Spanish-language media outlets more than doubled their social media followers from 7 million to over 18 million.

Iran. Iran uses both formal and informal instruments to expand its influence in Latin America and the Caribbean and prepare for any potential contingencies. Tehran seeks to expand its economic ties to the region, and leverages its security expertise and well-established diaspora in the region to expand trade and its overall influence. The Islamic Revolutionary Guard Corps-

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Qods Force, Tehran's primary external operations unit for exporting the Islamic Revolution, maintains operatives in foreign embassies, charities, and religious and cultural institutions to enhance ties globally. In the past year, Iran has expanded economic and security cooperation with Venezuela on fuel transfers, food staples, and military assistance, possibly expanding the Qods Force's presence in the region. Tehran also relies on a system of Iranian state-sponsored and non-state facilitated media outlets to shape the information domain to generate empathy for Iran and Shia Islam and diminish Western influence in the hemisphere. Tehran maintains a Spanish-language channel that reaches 17 countries in the region.

Venezuela. The Venezuelan people continue to suffer under the illegitimate Maduro regime. They lack basic services, clean water, food, and health care. The impacts of COVID-19, gas shortages, increasing levels of unemployment and inflation (at over 3000%), and human rights violations all compound one of the most severe humanitarian crises in the history of this hemisphere. The illegitimate regime is even struggling to provide basic services within Caracas, to which it previously diverted most of its resources to avoid threats to its control. Venezuelan migration continues to destabilize the region, straining the health systems and economies of Venezuela's neighboring countries. As of December 2020, approximately 5.5 million refugees and migrants from Venezuela were displaced globally, with some 4.6 million remaining in Latin America and the Caribbean. Venezuela is also the primary foothold and access point in the region for ESAs, enables TCO activities, and gives refuge to regional terrorist groups.

Cuba. Cuba remains a regional corrosive influence that enables and inspires autocratic regimes in the hemisphere and is the primary supporter of the illegitimate Maduro regime in Venezuela. Cuba is the entry point for ESA influence in the region and its reach extends beyond this hemisphere.

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Nicaragua. Nicaragua's current political crisis that began in 2018 continues, with President Ortega's policies still leading to calls for his resignation. We are already seeing a concerning suppression of the opposition, in advance of this year's election. Managua maintains close ties with Moscow, whose security assistance to Nicaragua focuses on Professional Military Education, donations, and the provision of humanitarian assistance in a strategy to subjugate the Nicaraguan government and counter U.S. regional goals. Over the past decade Russia built a joint counternarcotic training center in Nicaragua, trained at least 500 Latin American and Caribbean officers, and conducted multiple maritime and air deployments to the country.

What we're doing about it. We work to effectively posture U.S. forces to ensure we can achieve NDS objectives. USSOUTHCOM remains committed to maintaining our advantage and to our allies and partners to protect and advance mutual security interests. We, along with State do this through a wide range of security cooperation and assistance activities aimed at building partner capacity such as DOD's Joint Exercise and Humanitarian Assurances Programs and State's Foreign Military Financing (FMF) and International Military Education Training (IMET) programs, as well as information and intelligence sharing. To put it simply, we outcompete bad guys by being the good guys. While our adversaries look for opportunities to extract, we look for ways to build up. We work with partners to understand where their capability gaps are and how we can help fill those in – stronger partners are better equipped to secure our hemisphere, our neighborhood. Our training is responsive to the needs of our partners, it's the highest possible quality, and includes emphasis on professionalism to include values like respect for human rights and the rule of law as an inherent element of professional military and security forces. It emphasizes the importance of a strong non-commissioned officer corps and empowering women as part of the entire force. At USSOUTHCOM, we are committed to

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integrating gender perspectives into all of our activities, and we encourage our partners to create structural changes in their militaries to allow for the same through our Women, Peace and Security in the Western Hemisphere Initiative. For a nation's defense and security forces to be sustainable, legitimate, and respected, the meaningful inclusion of women is imperative. Our Human Rights Office, the only such program at any Combatant Command, actively promotes building stronger military human rights programs with partner nation militaries.

Our exercise program is designed to counter threats, build readiness, and enhance our partners' capabilities, interoperability, and domain awareness. This is a vital component of our strategy, allowing us to conduct multi-domain exercises with our partners and build interoperability and readiness that improve our collective ability to secure the region.

Being on the field, with a presence at Cooperative Security Locations in El Salvador, Colombia, and Curacao, and a Forward Operating Site in Honduras, home of Joint Task Force Bravo (JTF-Bravo), enables us to answer the call and build trust, when our neighbors ask for help in a crisis, as they did following the back-to-back major hurricanes that devastated Central America late last year. In the aftermath of **Hurricanes Eta and Iota**, our forces at JTF-Bravo, with support from our components and allies, responded immediately, conducting search and rescue operations and delivering lifesaving aid to areas isolated by the storms, delivering over 1.2 million pounds of life-saving humanitarian aid and rescuing 852 people. There is no better way to demonstrate U.S. commitment to the region than to respond to our neighbors' needs in times of crisis.

Through our security cooperation program, we focus on building our partners' capacity to conduct ground and maritime interdiction, defend their cyber networks, secure their borders and sovereignty, and maintain domain awareness. The Near Coastal Patrol Vessel (NCPV) program

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is a USSOUTHCOM initiative to address selected Caribbean and Central American partners' requirements for a maritime patrol vessel with the capacity to conduct sustained Maritime Interdiction Operations. Fielding these vessels in key partner nations will increase interoperability and regional ability to counter regional threats, the nefarious activities of which pose an existential threat to many of our partners.

Another important capability to outcompete our adversaries in the region is intelligence-driven – we must gather information across all domains and share it as widely as possible with our partners. We shine a light on the PRC's predatory and corrupt actions so our partners can recognize the PRC's malign activities and make well-informed decisions on engaging Beijing. We continue to convey to our partners and allies that Beijing and Moscow seek to undermine their national sovereignty and fosters instability that allows TCOs a foothold within their borders. We also highlight that partnering with the PRC requires turning a blind eye to malign behavior that ranges from corruption and human rights abuses to environmental degradation and natural resource depletion.

Transnational Criminal Organizations (TCOs) and Violent Extremist Organizations (VEOs).

TCOs. TCOs are violent and they pose a national security threat to the United States homeland. They share the goal of PRC, Russia, and other malign actors to advance their self-interests at the expense of our partners' sovereignty. TCOs engage in a wide array of illegal activities including drug and weapons trafficking, human smuggling and trafficking, and money laundering. TCOs make up an approximately \$90 billion a year life-threatening enterprise through cocaine profits alone and are responsible for thousands of deaths in the United States each year, forging a trail of violence, corruption, and instability through our region in route to

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our homeland. In many cases, TCOs are better funded than partner nation security forces. In 2020, drug traffickers likely attempted to move an estimated 2,300 metric tons of cocaine, departing from the source zone toward the United States, Europe, and other markets. Their efforts persist despite combined security operations and COVID quarantine measures (such as border and port closures), indicating these traffickers are bent on undermining security and prosperity for us, our allies, and partner nations all for the sake of profit. The COVID-19 environment has caused some traffickers to stockpile cocaine, and complicated coca eradication operations in the Andean Ridge. Traffickers have adapted to the COVID environment, cocaine flow has increased and rebounded to pre-pandemic levels. We must remain ready with increased U.S. and partner nation presence and pressure to stem this flood.

Narcotrafficking is a scourge throughout the hemisphere and TCOs aren't the only ones who benefit – the Maduro regime is heavily involved in trafficking narcotics, overtly supporting narcoterrorism while the innocent citizens of Venezuela continue to suffer under extreme oppression and grinding poverty. From 2015 to 2019 the known drug flow out of Venezuela increased by 145%. Over the last few years, the illegitimate Maduro regime has collaborated with National Liberation Army (ELN) and the Revolutionary Armed Forces of Colombia Dissidents (FARC-D) to move hundreds of metric tons of cocaine from Colombia through Venezuela via non-commercial aircraft and commercial cargo ships. This relationship also extends to illicit gold mining, a critical commodity that Maduro uses to sustain his illegitimate regime and military loyalty at the expense of the Venezuelan people.

Regional Terrorist Organizations. The Revolutionary Armed Forces of Colombia Dissidents (FARC-D) and National Liberation Army (ELN) are the two main organized armed terrorist groups and drug trafficking organizations in the region whose actions pose a direct

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threat to our homeland and partners. The FARC-D is composed of remnants of the FARC, who traffic drugs and engage in extortion and illegal mining to generate revenue. The FARC-D targets Venezuelan nationals for recruitment, using money, food, and safe passage to encourage or coerce desperate Venezuelan migrants to support their cause. The ELN also remains committed to fighting the Colombian government and does so violently through the use of improvised explosive devices and vehicle-borne explosives. This group fundraises primarily through the drug trade and illicit mining, as well as by imposing “war taxes” on drug labs and other businesses in its control. The ELN and FARC-D benefit from unchallenged freedom of movement and protection in Venezuela, with much of their leadership operating with impunity from within Venezuelan borders. Venezuela has become a paradise of impunity for narcotraffickers, while the Venezuelan people are forced to endure a nightmare of insecurity.

Al-Qa`ida and ISIS maintain some sympathizers in the region. After ISIS’s intense propaganda campaign from 2014 to 2017, as many as 200 Trinidadians left the Caribbean islands to join the fight in Iraq and Syria. Several family members who traveled with the fighters are still in the Middle East and seek to return to the region, which will challenge the region’s security services at a time when they are already overstretched due to the pandemic. **Hizballah** leverages the region’s Lebanese diaspora throughout Latin America and the Caribbean for fundraising, recruiting, and logistical support. Operationally, Hizballah’s Islamic Jihad Organization (IJO), its external operations arm, is responsible for at least three high-profile attacks in the region and three other planned operations that were disrupted.

Special Interest Aliens (SIAs). In 2020, U.S. and partner law enforcement, with support from the intelligence community, arrested 66 Latin American human smuggling facilitators involved in moving non-U.S. citizens who potentially pose a national security risk to the United

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States or its interests. These facilitators move SIAs from countries like Afghanistan, Bangladesh, Pakistan, Somalia and Yemen - areas with pronounced VEO activity - through Latin America and toward the U.S. for fees ranging from \$10,000 to \$50,000 per person. This business is dangerous, but lucrative, generating between \$150 to \$350M a year for the facilitators.

What we're doing about it. Our regional partnerships are vital to security and prosperity in this hemisphere and to our collective ability to confront global challenges including ESAs, TCOs, and VEOs. The men and women of USSOUTHCOM work hard every day alongside our strong interagency and international partners to disrupt and degrade these adversaries, while maintaining U.S. presence, access, and influence in our hemisphere. The Joint Interagency Task Force-South (JIATF-S) in Key West, conducts our statutorily-directed mission to detect and monitor illicit narcotics, delivering a high return on modest investments. Last year, this international and interagency "team of teams" helped keep 264 metric tons of cocaine off U.S. streets. JIATF-S-facilitated interdictions historically account for almost four times the cocaine seized by all domestic and border enforcement efforts combined. In an operating area that is 11 times larger than the United States, JIATF-S provides the best bang for the taxpayer buck when it comes to keeping drugs from arriving on our shores.

Last year, recognizing the seriousness of the TCO threat to the U.S. homeland, the Secretary of Defense authorized an all domain enhanced counternarcotic operation to reduce the flow of illicit drugs, degrade TCOs, and increase interoperability and readiness. In the past year, the U.S. Navy stepped up, providing more ship presence and maritime patrol aircraft. These assets have achieved significant return on investment as well as provided readiness building opportunities for our Fourth Fleet and Navy crews. This initiative included an increase in

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surface and air platforms, other intelligence assets, and a Security Forces Assistance Brigade to work with our partners. We are putting these assets to good use, integrating with interagency and international partners across all domains to ensure long-term success. Through the employment of these additional assets we increased the targeting of known air and maritime illicit trafficking events by 65%. Our whole of government and partner nation approach has disrupted over 240 metric tons of cocaine and almost 100,000 pounds of marijuana. We have detained over 700 suspected drug smugglers, denied almost \$6 billion of profits to TCOs, and most importantly, saved the lives of more than 2000 Americans. A Security Forces Assistance Brigade is currently training Colombian and Honduran forces to more effectively fuse their intelligence to inform manual eradication and lab destruction efforts – helping to stop the drug threat closer to the source, before it begins its journey to the U.S. We plan on expanding this effort into other nations in Central America with a focus on capabilities to counter TCOs.

With this increase of U.S. all domain presence and pressure – a sign of U.S. leadership and commitment to the region – our partner nations, who could have easily turned inward to focus on the COVID-19 crisis, instead stepped up their participation to counter TCOs, demonstrating their commitment to countering this threat. Key partners like Colombia, Costa Rica, Panama, Guatemala, El Salvador, and others have been involved in almost 60 percent of drug disruptions during this operation. Years of sustained security cooperation with our partners throughout our hemisphere is really paying dividends – we have helped build the capability of these nations to operate with us to disrupt drug shipments before those loads enter the homeland.

We have very willing partners in this hemisphere, and they demonstrated their commitment throughout the year, despite the increased challenges of COVID. Colombia kicked off Operation Orion V in April 2020, just as COVID was beginning to impact their country,

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stating that if the United States is committed to the drug fight during COVID, they would stand with us. Operation Orion V was a multi-national (26 countries), all-domain operation that resulted in 50 metric tons of cocaine disrupted, 72 drug labs destroyed, and \$1.5 billion in profits denied to TCOs. The U.S. provided maritime patrol aircraft (MPA) and analyst support to this operation. Colombia just concluded the follow-on Operation Orion VI, in which this coalition disrupted another 76.5 metric tons of cocaine and detained over 400 traffickers. This is just one example of the large return on investment gained by combining a willing and able partner with a committed U.S. presence in the Western Hemisphere.

While the Secretary of Defense agreed to continue sourcing this mission with traditional military assets, this mission also benefits from non-traditional resources. Congressional support to the counternarcotic mission has been instrumental in the success of these operations. We are filling capability gaps through innovative solutions like the Multi Mission Support Vessel (MMSV). The MMSV has supported the disruption of almost 8 metric tons of cocaine and 15,000 pounds of marijuana, denied over \$180 million in profits to TCOs, and detained 48 drug traffickers, while also keeping three low profile vessels carrying tons of narcotics from reaching our shores. It also extends the reach of our partner nation interdiction vessels as they launch in support of these counterdrug operations. We are applying commercially-available technology like unmanned aircraft systems to increase the MMSV's ability to conduct detection and monitoring and provide information to partner nation interdiction assets.

SOUTHCOM employs less than 1% of DoD Intelligence, Surveillance, and Reconnaissance (ISR) resources to counter ESAs and TCOs in this region. To meet the mission, we are pushing the envelope with innovative techniques, focusing on a 21st century, non-traditional approach to intelligence that integrates publicly available information, advanced

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analytics, artificial intelligence and machine learning, and open collaboration with allies and partners to disrupt threats. These emerging tools offer persistent, AOR-wide coverage without risk to personnel at a relatively low cost and puts us in a position to better compete against adversaries. Our Technical Network Analysis Cell (TNAC) and Asymmetric Target Acquisition Center (ATAC) are just two examples of our approach. For an investment of \$1.2 million the TNAC at JIATF-S denied TCOs of \$817.1 million in revenue by providing actionable intelligence, in cooperation with our law enforcement partners, that is shared with partner nations and interagency partners leading to numerous disruptions. The ATAC, run by our Special Operations Command South (SOC SOUTH), is supporting law enforcement efforts to counter TCOs. The Congressional support we have received for ISR has been critical to sustaining the innovative capabilities that support our unique mission, making our non-traditional approach to ISR possible. USSOUTHCOM ISR activities are optimized for return on investment with a mix of traditional platforms, purpose-built sensors, and increasingly non-traditional collection methods. USSOUTHCOM will continue to work with the Department to ensure we can meet our vital mission to disrupt transnational criminal organizations, as well as work in concert with regional partners to confront shared threats.

While we are making strides, we are but one part of the solution. This problem set requires a whole-of-government and whole-of-society solution to address both the supply and demand sides of this threat. Drug overdoses have killed 840,000 Americans since 1999, and continue to kill 70,000 Americans a year. Drugs cost our nation billions each year in criminal justice, healthcare, and productivity losses²— in addition to the suffering caused by shattered and

² <https://www.drugabuse.gov/drug-topics/trends-statistics/costs-substance-abuse>

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lost lives. We must continue and further enhance the tremendous interagency and international cooperation we have fostered over recent years against this common enemy.

As the U.S. Coast Guard provides the bulk of our counterdrug forces, the acquisition and deployment of their Offshore Patrol Cutter will be critical to keeping drugs off our streets and countering TCOs. Each additional force package (maritime patrol aircraft, flight deck capable ship, embarked helicopter, small boat (US Coast Guard over-the-horizon boat or US Navy 11 meter RHIB), and law enforcement detachment) enables the disruption of 35 more metric tons of cocaine and the strong presence reinforces to our partners that we are all-in with them – building trust.

On the counterterrorism (CT) front, our Special Operations Command – South (SOCSOUTH) maintains persistent presence in several countries in the region, working and training with partner militaries. Our focus is on improving partner nation CT response capabilities, interoperability, and information sharing. The DoD Rewards Program has again provided tremendous return on investment in the fight against terrorism. In 2020, USSOUTHCOM paid \$979,000 in rewards to 54 informants that resulted in the neutralization of a record 107 individuals who were terrorists or force protection threats and seizure of 26 weapons/explosive caches and \$952,000 in cash. Although this is a counterterror and force protection program, it also yielded significant counternarcotic effects including the seizure of 14 metric tons of cocaine and the destruction of 12 drug labs. We also continue to focus efforts on assessing the financial underpinnings of national security threats in the region and have deepened our counter-threat finance related collaboration with the U.S. Treasury Department and interagency partners. This includes providing direct analytic support to the development of sanctions against Central and South American-based transnational organized crime groups that

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launder money, traffic drugs, and corrupt government officials in the region. An area requiring more emphasis is TCO network mapping and holistic interagency and partner nation efforts to dismantle key TCO centers of gravity such as logistics and finances.

USSOUTHCOM also takes a total force approach to these challenges, taking full advantage of the Reserve component, composed of Guard and Reserve Forces. With fewer apportioned forces and a smaller budget than most regional combatant commands, I have a great appreciation for the importance and critical support they provide to our interagency and international partners. The ability of the National Guard, to work directly with host nations and local institutions through the State Partnership Program is a force multiplier for engaging our partners. Over one third of those State partnerships are in our AOR, strategically complementing our security cooperation efforts.

Joint Task Force Guantanamo Bay (JTF-GTMO). JTF-GTMO continues to conduct safe, legal, and humane detention operations. In an effort to do so in a more efficient manner, the JTF has taken steps to right-size its force and consolidate operations. To date, we have safely reduced military personnel by over 20 percent. This is part of an ongoing effort to continually assess all USSOUTHCOM operations to ensure we are maximizing use of resources.

What More can be Done/What we Need

Quality of Life. People are our most important resource and our absolute priority. None of the initiatives described above would be possible without the tremendous work of our men and women. South Florida, including Miami and the Florida Keys, is a high cost-of-living area that poses many challenges to our personnel. The housing market is so competitive that personnel pay upwards of \$10K of up-front fees in order to secure a rental unit. We are working with the supportive local community to find immediate relief options for our service members

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and civilians on housing and other factors that contribute to the high cost of living. We are also appreciative of the Department of the Army's support to find a permanent, cost effective housing solution here in Miami. We have also established TEAM SOUTHCOM, a family readiness group, to support all of our families, especially as they transition to this high-cost area and a non-standard military installation.

Congressional Support. We appreciate your support of our security cooperation program in the USSOUTHCOM AOR as a continued recognition of the importance of these programs in our hemisphere. We also appreciate the increased flexibility that Congress included in the FY21 Consolidated Appropriations Act by increasing the percentage of 333 funds that may be used over two years. Greater funding flexibility increases our ability to plan and execute multi-year programs to build partner capacity. Congress also continued support to USSOUTHCOM's ISR program and the MMSV – two investments that will increase our domain awareness and ability to stop threats bound for our homeland.

Infrastructure. The FY21 National Defense Authorization Act authorized planning and design funding for a new Command and Control Facility for JIATF-S, recognizing what the U.S. Army Corps of Engineers determined was a compelling need to replace its current 1950's constructed facility. We appreciate this support and are working to complete the design for a resilient facility built to enable interagency and international collaboration for this critical mission. USSOUTHCOM is also working closely with the Defense Health Agency to replace the hospital at Naval Station Guantanamo Bay (NSGB), which is experiencing severe structural deterioration. This medical treatment facility (MTF) is the only strategic medical hub to support the full spectrum of mission personnel operating in the USSOUTHCOM AOR! It is also the

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only MTF for personnel at NSGB, as there are no civilian options available. It is also important to note that NSGB is a strategic asset as the only U.S. base in the USSOUTHCOM AOR.

Supporting our Partners. The U.S. military has established programs that help our partners develop diverse and inclusive militaries that respect the rule of law and human rights. These are the characteristics of a professional force that has legitimacy in the eyes of its population. Consistent engagement with our partner militaries and security forces through programs like our human rights training and Women, Peace, and Security programs, as well as through the range of security cooperation and assistance programs, is essential to our ability build their institutional capacity and resiliency to the range of threats we all face together.

Conclusion

The security threats in the Western Hemisphere, our shared neighborhood, demand a sense of urgency. TCOs threaten our U.S. homeland. We also see the rise in the PRC's leverage and influence is not just a South China Sea problem, it is a global problem, and it requires a solution that includes our partners and allies. When our neighborhood is strong, so is our national security. We no longer have two oceans to keep our adversaries at bay – their malign activity is knocking on our door, creating instability in an already fragile region, enabling TCOs to take hold in an attempt to weaken democracies and perpetuate corruption. We must stand by our partners.

We hold ourselves to a high standard. We have strong values as Americans. We ensure our partners respect human rights; we train them on the responsible use of military equipment; we help build the institutional capacity to maintain professional military and security forces; and we operate transparently and in accordance with civilian leadership, international norms, and the rule of law. U.S. security cooperation with our partners ultimately bolsters our own national

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security and has done so for over 70 years. Investing in our neighborhood is an investment in national security and we are at a critical juncture where focus and attention are essential to maintaining positional advantage.

I look forward to discussing our efforts to capitalize on the opportunities for shared security that exist in strengthening our partnerships.

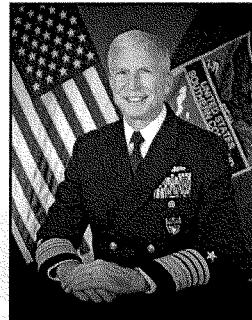


BIOGRAPHIES

UNITED STATES SOUTHERN COMMAND

Craig S. Faller

Admiral, United States Navy
Commander
U.S. Southern Command



U.S. Southern Command is responsible for all Department of Defense security cooperation in the 45 nations and territories of Central and South America and the Caribbean Sea, an area of 16 million square miles.

Admiral Craig Faller is a native of Fryburg, Pennsylvania and 1983 graduate of the U.S. Naval Academy with a Bachelor of Science in Systems Engineering. He is also a 1990 graduate of the Naval Postgraduate School with a Master's in National Security Affairs (Strategic Planning).

At sea, Admiral Faller served as Reactor Electrical Division Officer, Electrical Officer and Reactor Training Assistant aboard USS South Carolina (CGN 37); Operations Officer aboard USS Peterson (DD 969); Station Officer aboard USS Enterprise (CVN 65), and Executive Officer of USS John Hancock (DD 981). As Commanding Officer of USS Stethem (DDG 63), he deployed to the Arabian Gulf and participated in maritime interception operations in support of United Nations sanctions against Iraq. During his tour as Commanding Officer of USS Shiloh (CG 67), he assisted victims of the devastating tsunami off Indonesia. Finally, as Commander, John C. Stennis Strike Group / Carrier Strike Group 3, he deployed to the Middle East supporting Operations New Dawn (Iraq) and Enduring Freedom (Afghanistan).

Ashore, Admiral Faller served as a D1G Prototype Staff Officer at the Nuclear Power Training unit in Ballston Spa, NY; Action Officer in Navy Strategy and Concepts Branch (NS13); Legislative Fellow on the staff of Senator Edward M. Kennedy; Program Manager, Surface Nuclear Officer Programs and Placement; Executive Assistant to the Commander U.S. Pacific Command; Executive Assistant to Commander U.S. Central Command; Executive Assistant to the Chief of Naval Operations; Commander, Navy Recruiting Command; Director of Operations (J3) U.S. Central Command; Chief of Navy Legislative Affairs; and Senior Military Assistant to the Secretary of Defense.

Admiral Faller has earned various personal, unit, service and campaign awards.

(Current as of November 2018)

CLIMATE CHANGE

Ms. MCCOLLUM. Thank you so much. And your full testimony has been submitted for the record, and members have a copy of it. Thank you so much for that overview.

You heard my questions on climate change. You touched a little bit about some of the challenges that you are facing in your opening statement. Would you please elaborate on that?

Admiral FALLER. Our main line of effort, our main engagement, is to work with our partners on their ability to respond rapidly.

And the science is there; the climate is more violent. And I will give you an example, Madam Chair. In the fall of 2019, I went on an extensive tour to different base locations in Guatemala. And as we flew around the country and talked about how they could improve their security and how we could partner together, it struck me that the rivers were dry, the fields parched, and the crops that should have been ready for harvest were withering. And they had been in a drought condition for some number of years.

One year later, those same fields were flooded and washed out by the two most violent storms to hit that region in rapid succession. Category 4 hurricanes right around the beginning of November rolled in on the same track 15 days apart. And, today, all three nations in the Northern Triangle have declared national food emergencies, and there is a significant portion of their populations that don't have the basic food to eat.

So that is an example. And then where we come to play is to help our partners determine the best way to respond. Their response, their department of militaries is necessarily in support of their interagency, but just as we look inward in a disaster, they do. We work on rapid response.

We are very fortunate—as was mentioned in some of your opening statements, posture is key. We are very fortunate to have a security cooperation location in Soto Cano, Honduras. And there we have Army helicopters, lift, around 14 of them. We immediately deployed those helicopters during that hurricane to save lives and help our partners. We deployed them in support of our embassies, our ambassadors, and the USAID, and we had them in constant operation for about a month's time last November.

And I think it points to, when partners are in need and the United States steps forward and extends an outstretched hand, we build trust and we further strengthen that relationship for the long term, and it can be a force for good.

Ms. MCCOLLUM. Thank you.

Mr. Calvert.

INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION, AND RECONNAISSANCE

Mr. CALVERT. Thank you, Madam Chair.

And, Admiral, thank you for your service.

Admiral, it is my understanding that SOUTHCOM uses less than 1 percent of the DOD's ISR resources. Is that correct?

Admiral FALLER. Yes, sir. It is about 1 percent of the resources for ISR.

And as I mentioned in my opening statement, that is absolutely critical. Our intel drives everything we do. You know, we turn it into knowledge. We share it where we can, particularly with our

own U.S. Government agencies. It helps us understand about what is on the field and how to best respond long term.

Mr. CALVERT. But if you had additional ISR to counter transnational organized crime, other critical objectives, that would be very, very helpful. You need additional platforms to make that mission succeed?

Admiral FALLER. Yes, sir. We really appreciate the support of this committee, in particular, in the past. We had an ISR transfer fund that was critical to meeting those needs, a very cost-effective fund that was not included in last year's budget. And while we have not seen the full budget for 2022, I would anticipate that at the top of my unfunded requirements list will be the need for additional ISR, to include what we call nontraditional ISR.

It is using machine learning and artificial intelligence to look through the vast amount of commercially available foreign data, data on foreign adversaries. We have used that ISR transfer fund money to do work in that environment, and we have uncovered a considerable amount of useful information that we have been able to pass to host nations for their action, our law enforcement partners. And, in some cases, it has been used to be able to illuminate malign Chinese and Russian behavior.

GLOBAL POSTURE REVIEW

Mr. CALVERT. Regarding the global posture review and the new National Defense Strategy—I guess they are reevaluating that at the Pentagon now, as you are aware—and our existing security relationships with key partners in the SOUTHCOM AOR, what focus do you think we need to change in regards to the great-power competition, especially China?

Many have questioned the utility, by the way—and I will just bring that up because I only have a little bit of time—of putting more littoral combat ships in your AOR to give you some more flexibility in that operation. What is your comment on that?

Admiral FALLER. To start with, the global posture review, it is welcome, always welcome, to look at our global footprint.

I think our approach needs to be truly global. The front line of competition with China is in our neighborhood, in this hemisphere. And in order for us to win that competition, which would be far more cost-effective than a confrontation, we have to compete with our strengths where we can get the best leverage. And, in this hemisphere, a small amount of time and presence and resources has a high rate of return on investment.

We need Navy ships to be in that mix. Up until 2019, we would get an occasional United States Navy ship. We made the case during the combatant command review for additional assets. And we had, on average, about three United States Navy ships over the past year to augment our very robust Coast Guard presence.

Those Navy ships participated in transnational criminal organization operations, worked with partners, worked with the Coast Guard, and made a difference—significantly put pressure on the transnational criminal organizations, sent a message to would-be competitors that the United States values the region and is here. We were able to conduct exercises with partners from Ecuador to Colombia, to Peru—partners with capable navies.

And so, for me, it is about the capability. It is about having built-in-the-U.S. Navy ships working with Joint Interagency Task Force-South and our Navy South component from Florida. So whatever capability that the United States Navy can source to that I welcome.

But I would note that our littoral combat ships, particularly the Freedom's recent deployment and the Gabby Giffords, perform quite well. And I know that the Navy is committed to overcoming the challenges associated with the maintenance on those ships.

Mr. CALVERT. Thank you, Admiral.

And, Madam Chair, I yield back.

Ms. MCCOLLUM. Thank you.

Next, we have Mr. Cuellar.

LATIN AND SOUTH AMERICA INFLUENCES

Mr. CUELLAR. Thank you very much, Madam Chair and Ranking Member, for holding this meeting.

Admiral, I want to talk about your sense of urgency of what is happening in Latin America. As all of us on the committee have said, we are so used to looking at the Middle East and looking at other parts of the world that we keep forgetting our own backyard.

And I think the maps that you have provided to us to show where the criminal organizations are coming from and how they are affecting us, whether they are bringing in drugs or people, they are there. And many times, as you have said and as we all know, sometimes those organizations are stronger than some of the state security forces that we have.

And then, on top of that, it is not only those transnational organization groups that we have, but we have the influence of Iran in South America. Not only do we have the influence of them, but we also have the Russian influence in countries. But the one that we have been talking about is the one with the Chinese.

The last time you provided these reports, Admiral, you know, we had X amount of countries in South America, 19—I mean, there were less than that, but now we have 19 out of the 33 countries that have joined the One Belt One Road Initiative. There are now 25 out of the 33 countries that host Chinese infrastructure projects, including Mexico, Belize, or even, outside of that, the Bahamas, Panama, where the canal is at, and then so many other ones.

Then we talk about, even now, eight countries that are producing and using and testing or interested in purchasing Chinese COVID-19 vaccines.

Then we look at—and this is what is very interesting. We know the major Chinese IT footprints and space tracking stations in Argentina. You have some in Peru, Ecuador, Guatemala, Brazil, and, of course, Venezuela. And, you know, all of that worries me, because, from the last time you provided this, the numbers keep going up, the investments keep going, and they keep getting closer and closer to the U.S.-Mexico border, where I live at.

I want you to talk to us about this sense of urgency and what this committee can fund. I know there is an assessment that you all are working on with the Department of State, USAID, and I think the RAND Corporation is going to be involved to do that study. And it should have been done by this last December, but

COVID had something to do with that, but I think it should be ready by the 31st of this year.

Tell us what we need to invest. Because I agree with you, we should have a sense of urgency. I mean, we keep looking at everywhere, but it is our own backyard that worries me. Tell us about your sense of urgency and what we ought to be investing in and what this committee should be doing.

Admiral FALLER. Well, thank you for emphasizing that sense of urgency that we certainly feel at United States Southern Command. And the Department has been supportive, as has your committee. By last year, your committee, in particular, was supportive in establishing additional funds in our security cooperation.

I mentioned the 1 percent of ISR. Intelligence drives everything, and the more we know and understand what the threats are up to, the better we can participate in a whole-of-government and a whole-of-nation response. The National Defense Strategy certainly nails it in talking about that global competition and the competition with China.

We looked at ISR. We talked about ISR. Security cooperation is key. That is what builds partner capacity. That is how we become more interoperable with partners. The U.S. has the best equipment in the world, and partners want our equipment, and it is a long-term relationship.

As the budget is unveiled, I believe that will be at the top of my unfunded priorities. There is more that could be invested in the capacity. We sit at about \$120 million for 28 countries to help them build. It is a good investment long term for both the United States and our partners. It keeps them close. It is a relationship.

And then on the presence, posture matters. We were very supportive of Congress asking tough questions about some of the intended cuts to the defense attache. Those are our front lines in our embassy. We should look at the manning of our embassies—it is very, very lightly manned for today's competition—and then look at where we are postured as a military and where is the United States postured. In this hemisphere, it is the right thing to not have permanent bases; have light locations where we can come in and out and work with our partners on their training and readiness.

Thank you for the question.

Ms. MCCOLLUM. Thank you.

Mr. Rogers.

TRAFFICKING IN SOUTH AMERICA

Mr. ROGERS. Thank you.

Admiral, welcome to the subcommittee. Welcome to the Hill again. At one point in your career, I understand you were on the staff of Senator Ted Kennedy. So welcome back to the Hill.

Let me ask you and follow up on Mr. Cuellar's line of questioning about the role of the Chinese in the drug traffic in South America, Latin America.

China adversely affects the region through drugs, human trafficking, guns, and illegal mining, all of which are underwritten through Chinese money laundering. And here is how I understand that works. Historically, drug cartels have struggled to get their il-

legal profits back within their borders. However, recently, Chinese—what do we call them—money brokers have emerged as vital partners for Latin American drug cartels. Those cartels will bring proceeds from U.S. illegal drug sales to these Chinese brokers, who then launder those proceeds back to the drug cartels here in Latin America.

That has resulted in Chinese crime groups increasing their presence in places like Colombia. In fact, I spoke on the phone just yesterday with President Duque of Colombia—who, by the way, I think his administration is doing great work—and I welcome your comments—on eradicating coca, which is a main source of the opium in the U.S.

Thank you, Admiral, for being here today.

Let me ask you what you are doing about the drug problem—the drug cartels and the Chinese brokers. Tell us how that works and what we are doing about it and what we need to do on the up and up.

Admiral FALLER. Thank you for recognizing Colombia. They are a trusted partner. They exceeded all their goals in the counter-narcotics fight last year despite the pandemic. I would trust them to be alongside me and our team in any fight, as professionals that adhere to human rights and all the standards that we expect of our U.S. Armed Forces men and women. And thank you.

With respect to transnational criminal organizations, in this hemisphere, we have 8 percent of the global population and more than 60 percent of cryptocurrency. It is clear that entities, threat entities, are working around ways to strangle their money supply.

As I have met with key law enforcement partners, like NYPD Counter Narcotics Strike Force, FBI, DEA, and others, consistently they cite the significant and consequential role of Chinese banks in money laundering. And it is very hard to crack into that, with technology barriers, language barriers.

And so, when you look at the corrosive and corrupt influence of transnational criminal organizations—because corruption really fuels them, their ability to undermine officials and use extortion—it is the same sort of principles that the Communist Party of China thrives on. They could shut this down if they wanted to, but it is not in their interest to do so. It is in their interest to undermine the democracies so that they can gain more influence for their version of a future world order.

Mr. ROGERS. Well, it is a huge item. I am told that transnational criminal organizations are generating around \$90 billion in profits just from cocaine. And a lot of that cocaine and the drugs out of South America lands in my district. And we have been fighting that fight with an organization called UNITE now for a dozen years, but it is being flooded by the drugs coming out of South America.

Thank you for your service, your lifetime of service, Admiral. And thank you for your present duties. A tough chore. Somebody has to do it, and you are doing great. Thank you.

I yield back.

Ms. MCCOLLUM. Thank you.

We are going to hear from Mr. Aguilar, and then we will go to full committee Ranking Member Granger.

DRUG INTERDICTIONS

Mr. AGUILAR. Thank you, Chairwoman.

Admiral, good to see you again, and thank you for your service.

We have talked a little bit about drug interdiction, and if I could just ask a follow-up question on that. You talked with Mr. Calvert about some of the ISR capabilities. And, you know, through the briefings we have had, we know that our ability to identify drug smuggling in the Pacific is far greater than our capacity to interdict.

What more can we do to help you in these efforts? What resources are needed? And if you can touch on specifically some of the work that you have been doing with the Coast Guard in aiding those drug interdictions in SOUTHCOM AOR.

Admiral FALLER. Thank you.

The area that we are looking at, where the principal routes run, is larger than the United States. And, on any given day, we are covering that area with about 10 U.S. ships, a mix of Coast Guard and U.S. Navy, an innovative vessel called the MMSV that you all have appropriated, which has been very successful.

And then we do that with partners. When the Coast Guard and the United States Navy are there, partners step up. And we saw last year that partners increased their participation in the counter-transnational-criminal-organization operations, the pressure, by 10 percent in interdictions. And that is significant in 1 year, especially given the pandemic. It is an example of, when the Coast Guard and the Navy are there, others will come out.

We cited the success of Colombia. Costa Rica is another partner that has done extremely well. Panama just stood up a fusion center. The key here, long term, is getting a network of partners together to keep pressure on the source, the supply lines, all aspects of the business model.

Another key in the last year as part of our surge in this threat space has been the development of a targeting process with the interagency here in the U.S. So, learning from what we have done in the counterterrorism ops and then working as a part of a U.S. Government interagency process, we have been able to improve that targeting process by using machine learning, artificial intelligence, and really increase the speed of which we can build a target package and then hand off to a partner nation's law enforcement. So that is significant.

We will never interdict our way out of this. We have to look at these organizations as an organization and determine where their key nodes are, centers of gravity, if you will, and then crush that. We talked about money laundering as part of that. There is a cyber piece of this; there is an information piece of this.

Bringing all elements of power and all domains is the way forward for us to make a lasting difference on this threat.

Mr. AGUILAR. I appreciate the answer. Thanks so much, Admiral.

CHINA IN SOUTH AMERICA

Mr. AGUILAR. Can you talk a little bit more about China and what keeps you up at night, as far as their activities within the AOR and the relationships in some of these countries?

Admiral FALLER. When we sit down with our partners, it is part of the conversation that we talk about the Chinese economy and the U.S. economy. It is undeniable that China is the number-one trading partner with the United States, number-one trading partner with most of our partner nations. Now they are number-one trading partner with South America writ large and soon, I think, will be a larger trading partner with the hemisphere.

We have to determine as a Nation how we win the competition without ever going to conflict. And when China is able to come in and gift militaries in our region significant quantities of money with very little or no strings attached, that concerns me.

Some of our key partners have turned those gifts down, and I applaud that and thank them for turning it down. Others say to me, "We are drowning, we feel like we are drowning, Admiral, in a lifeboat, and we are going to take that life ring because we need it." And I say, "hey, watch where the cord is attached and what happens on that cord."

We recently hosted a security conference with our allies—U.K., Canada, French, the Dutch—that have interests here. And one of the Canadian members to that conference, from their foreign ministry, a citizen, a civilian, said to me, "we see the region—the threats of the region as a whirlpool and the nations in a lifeboat that are getting sucked down by the various pressures."

It does add to that sense of urgency that has been a theme here, and that is really what keeps me up at night.

Mr. AGUILAR. Thanks, Admiral. Appreciate your service, and thanks so much for being here today with us.

Thank you, Madam Chair. I yield back.

Ms. MCCOLLUM. Thank you.

And with no disrespect mentioned, trying to do things from distance to distance here, we will now hear from Ms. Granger. Thank you.

LITTORAL COMBAT SHIPS

Ms. GRANGER. Thank you very much.

Admiral, President Biden indicated during the campaign that he intended to devote as much as \$4 billion to address the root causes of Central American migration. And the budget framework released last week includes the first year of this funding, \$850 million, to address the matter.

We have talked so much about the issues in your area and the drug trade and particularly the drug trade and the help we need when they are going by water.

Recently, I was in a meeting and was very, very concerned and disappointed to hear that there was an attempt to mothball all littoral combat ships. And I would ask you—you mentioned those ships. Have you found them helpful, particularly in the area you are in and in the drug control?

Admiral FALLER. The Navy's presence has been essential, and it has increased the capacity of our partners. And, frankly, I have been on board the ships, destroyers and littoral combat ships, and talked to the Navy crews. They have really improved their readiness. It is a win-win.

On that program that you mentioned for the Northern Triangle, it is a welcome program. We need a long view for the region. And Plan Colombia was a good model because we stuck with it for 10 years and we didn't have fits and starts annually with the plan. This is a generational problem, developing the sustainable economies and the type of democracies that can take care of themselves so that we don't have this crisis in Central America that drives people to walk thousands of miles to save their kids and save their lives.

And I think, ma'am, that the military does have a role here, a very focused supporting role. Because our track record—we have learned from our past. We know how to abide by the rule of law and human rights. And we have a human rights program at SOUTHCOM, and we have worked with our partner nations to professionalize them. And they are part of the solution. And, in order to help going forward, we have to be present to help influence good behavior to be part of the long-term, sustainable solution.

We welcome a long-term plan. And so far, the discussions and the involvement of my command with Chairman Milley and the Secretary of Defense have been very transparent, very iterative, and they have been listening to us.

Ms. GRANGER. Good. I hope you will speak out for the littoral combat ships, because part of that was going into shallow water, being quiet, almost silent, the speed. And all the other indications I have is they are still helpful, so I was surprised at that.

I want to make sure that you have—are there other resources that—in this pandemic time, are there other resources you need to change or add to help you?

ASSISTANCE PROGRAMS

Admiral FALLER. Our humanitarian assistance program and the authorities we have there are the best tool I have. It is responsive. It is scalable. We can meet partners' needs, short and long term.

With the support of Congress, we received additional money—and the Department of Defense—additional money at the beginning of the pandemic. We have applied that to good use.

It is an authority that we are able to apply to partners' health agencies or civil agencies. I would like to see an expansion of that authority and the appropriation of the money to be able to work with partner militaries. And I think we could get enough oversight on it that we would ensure it did the right thing. That would be in the humanitarian assistance realm.

Similarly, given the competition we are in and our need to be able to flex to a partner's needs, when I visited the region in October, I found that our partners were just exhausted and running out of fuel and basic necessities. Yet I lack a near-term relevant mechanism to provide some assistance in that manner.

We have 2-year funding, which is greatly appreciated, a long view, which is what we need, but I think we need a military assistance program for small-dollar amounts—I am talking \$15,000, \$50,000—that would be real game-changers to build near-term trust and respond to partners' needs mil-to-mil.

Ms. GRANGER. Thank you very much. Appreciate that. I yield.

Ms. McCOLLUM. Thank you.
Mrs. Kirkpatrick and then Mr. Womack.

TRANSNATIONAL CRIMINAL ORGANIZATIONS

Mrs. KIRKPATRICK. Thank you, Madam Chair, and thanks for having this hearing.

Admiral, I represent a border district in Arizona, and I am very focused on how we ensure our border communities are protected from illicit drug activity and violence from transnational criminal organizations.

While the Department of Defense does not have the lead in many aspects of the counter-drug efforts, the Department is the lead agency for the detection and monitoring of aerial and maritime transit of illegal drugs into the United States.

My question is this: Can you provide an update on efforts to counter transnational criminal organizations? And how does the U.S. measure success or failure in this area?

Admiral FALLER. We appreciate the work that Air Force South in Tucson has done in the aerial part of this detection and monitoring. And they work hand-in-hand with Joint Interagency Task Force-South in Key West, which is a team of teams that is led by a Coast Guard two-star, Rear Admiral Doug Fears, that each and every day focuses on this very problem set.

In JIATF, we have every relevant agency in the U.S. that works in a counter-narcotics, counter-transnational-criminal-organization space, as well as partner nations from 24 different partner nations. And that is the real key. And we have made progress.

So, using the additional resources that the Department supplied in terms of Navy ships last year, we put more pressure on the networks. That kept our partners in the game. These security cooperation programs do have long-term payback for the United States. And, as I mentioned previously, our partners stepped up and increased their participation and their interdiction.

We were able to increase our targeting, so we were able to get on more targets last year, disrupt more flow, put more pressure on the networks, which generates more opportunity for partner nations and law enforcement partners to capture, detain.

And so we are on the good glide slope, but clearly not enough, when we still have tens of thousands dying in the United States and we still have organizations that have budgets larger and bigger than many of the security forces they face, and organizations that control territory, frankly.

And so more pressure, sustained pressure; and more focus on the source; and more focus on, as was mentioned in some of your opening comments, diplomacy and development as a way for people to have other models.

HUMAN RIGHTS OFFICE

Mrs. KIRKPATRICK. Thank you. I appreciate that.

I have one other question here. You also have the only human rights office throughout the combatant commands. Do you see meaningful progress in these areas? And what support do you need from Congress to strengthen these programs?

Admiral FALLER. We could have the best equipment, and we do, in the United States; we could have the best women and men in our force, and we do; but we could still lose the competition that we are in or the next war that we fight because we don't have legitimacy with our people. We can never take that for granted.

When I joined the military 42 years ago, it was not a foregone conclusion that we would have the trust of the United States population. And we do this by adhering to the rule of law, human rights, respect, those unacceptable behaviors that I talked of at the beginning—relentless pursuit of all of that.

Our command recognized over 20 years ago that key to sustainable security in this hemisphere was improving the human rights record of all aspects of our engagement mil-to-mil. And we invested in a human rights team, and we have increased that investment. It is something we fund out of hide; it is not a program of record with the Department of Defense.

We have been able to install human rights advisors in our partner-nations' security force, conduct workshops with our partner nations, ensure that it is embedded in their training programs, that it is embedded in their doctrine. And we have offered that into all the U.S. schoolhouses as a key element of building that professionalism and legitimacy.

Mrs. KIRKPATRICK. Thank you for the good work that you are doing. I, as representing a border district in Arizona, really appreciate your efforts.

And, Madam Chair, I yield back.

Ms. MCCOLLUM. Mr. Womack.

DRUGS AND MIGRATION

Mr. WOMACK. Thank you, Madam Chairwoman.

And, Admiral Faller, it is great to see you again.

You know, of all the COCOMs that we are going to get posture briefings from, I consider this, as it concerns the direct impact on my constituents, to be one of the most important, if not the most important. To be clear, what is going on in INDOPACOM or in Eastern Europe and some of the other trouble spots around the globe pose existential threats to our country; there is no question about that. But as it concerns my constituents, there is not another combatant command AOR that has such an immediate impact on my people than yours. And we are going to beat this TCO issue again, because I think it is of critical importance.

And I just recently came back from the border. Went down with Whip Scalise to McAllen, Texas. I know that is a little north of your AOR. But I am reading from a slide right now that was given to us by the Rio Grande Valley Border Patrol folks.

"In the period of time between March 4 and April 1, there were 14-plus pounds of cocaine"—so this is less than a month, 14 pounds of cocaine—"3,251 pounds of marijuana, \$1 million in currency, 24 firearms, 8 gang member arrests, 622 criminal arrests." That is in less than a month. And I know that a lot of this stuff is coming up into my district.

Thank you for your leadership in trying to bang the drum on the transnational criminal organizational piece.

But there is one part about it that we have only kind of glossed over, and that is the tremendous migration that is happening in a lot of your AOR into our area. And I know you have some numbers on it, how many people have actually migrated out of those areas because of the safety concerns. Can you speak to that and how incredibly important these numbers are?

Admiral FALLER. The threats hitting your home of Bentonville, Arkansas, and my home of Fryburg, Pennsylvania, it is killing people and it is stressing economies and governments and it is undermining security.

Just as an example, Congressman, when you look at this—yesterday, the intelligence agencies published an annual report. It is unclassified. And they looked at the scope of the migration over a 5-year period: 40 million. Forty million have migrated in this hemisphere. And they are looking at Haiti, Cuba, Venezuela, and Central America. Forty million people.

And that is the insecurity, the lack of ability to get healthcare for your children, lack of ability to find something to eat. And it has to be a whole-of-government, whole-of-nation, regional kind of approach, sustained, to put these numbers and give folks some hope.

Mr. WOMACK. Yes. Well, look, again, I appreciate your willingness to bring this to the attention of not only the Congress but other military leaders. And even though you are going to be retiring sometime this fall, I sure hope that you will continue to be outspoken on it.

STATE PARTNERSHIP PROGRAM

By the way, speaking of partnerships, as everybody on this committee knows, I am a big advocate of the State Partnership Program. And I would be remiss if I didn't give you an opportunity to talk about how incredibly important the SPP program is in your AOR.

Admiral FALLER. The State Partnership Program is the number-one assigned force that we have in order to help our partners build capacity in the United States Southern Command. And we are blessed to have the most robust partnership lineup, with 24 partners. Arkansas is aligned with Guatemala.

It is a long-term relation, as our Guard gets to develop and build that. And we really appreciate Congress's support in that. And I am constantly in communication with the TAGs of the various States as we look to how to help the partners build capacity.

And, frankly, training is good for the Guard too. I get the feedback. It is a two-way win as we move forward.

I think, as we look forward, if the Guard had some flexibility on this for 2-year money, things that could meet the partners' speed—they often have difficulty budgeting inside of our cycle and being able to do things—that might be one thing to look at.

Thank you.

Mr. WOMACK. Yeah. Thank you.

Madam Chairwoman, before I yield back, I just want to associate myself with the remarks of Ken Calvert and others that have talked about the ISR needs of SOUTHCOM and the ISR transfer fund that was lost. But critically important. Leveraging that kind

of technology with the mission going on in SOUTHCOM I think is pretty important, and I sure hope that we can continue to make the arguments for it.

And I will yield back. Thank you.

Ms. MCCOLLUM. Thank you.

We are going to hear from Ms. Kaptur and then Mr. Diaz-Balart. Thank you.

Ms. Kaptur.

LATIN AND SOUTH AMERICA COUNTRY GOVERNMENTS

Ms. KAPTUR. Thank you, Madam Chair.

And, Admiral Faller, thank you for your service to our country.

This has been a rather grim hearing in the way I view the world. I am reminded, 60 years ago John Kennedy launched the Alliance for Progress. And I am glad he did, but it doesn't seem like we have made a lot of progress over the decades. So maybe the architecture of what we are doing isn't integrated in the proper way.

What percentage of the territory in your AOR would you say is ungovernable?

Admiral FALLER. Thanks for mentioning the success of past historical models. We have spent a lot of time looking at what has worked and what hasn't worked, and the key is often the consistency over time and then getting at all aspects of our partners' needs, not just a couple points here or there. And the places where we have been able to make that work, we have turned chaos into democracy.

So, while there is a sense of urgency and some amount of grimness, as you suggest, Congresswoman, in the 1990s and the 1980s many of our partners in Central America were in civil wars. And so, from that respect, their democracies are fragile and young, and we have to hang with them as we get this right. And I think there is hope. I have met the people. We have values in common to get this right.

In terms of the threat and, as we discussed, the transnational criminal organizations that are in many cases better funded, their end strength is larger than the police, in some cases the police and the militaries combined in some countries, some 200 different organizations. And they do control territory. It ebbs and flows and—

Ms. KAPTUR. Take a stab, Admiral. What percent? What percent is not under normal civil—

Admiral FALLER. I would have to take that one for the record and come back with a more detailed analysis—

Ms. KAPTUR. Is it more than a third? Is it more than a third?

Admiral FALLER. I don't think it is more than a third, ma'am. But there are swaths that are very concerning.

And we would have to look at this holistically with my shipmate from NORTHCOM to look at the impacts from Mexico. Mexican cartels have grown their market share and moved south, which is a concerning trend.

Ms. KAPTUR. Well, I was extremely troubled when Mexico's President released Caro Quintero, the number-one drug lord on the DEA's list. I thought, "So Mexico is gone." And I won't go into all my experiences with Mexico. My experiences with people are very good; my experiences with the government are horrendous.

And I think, my sense is, that we are talking about narco states. And I am interested in your assessment, if not publicly now, privately, as to what is happening in these different countries and which of them are absolutely ungovernable.

And that is at the basis of so much what is causing disturbance in this country, certainly with the narcotics trade. And I would recommend a book—you have probably read it—by Sam Quinones, “Dreamland.” Because after the collapse of the white corn market in Mexico, displaced by corn grown in my region, yellow corn, the drug trade began to lock down the opium fields in the very places where the white corn market disappeared. We have never solved that problem. And all those people in those villages, from Oaxaca and everything, started to move north. They left their parents in those provinces, and then the kids came up north. A lot of them got involved in the drug trade.

And I really—I sense it is out of control. You may not feel that way. You are closer to the ground than I am. But I know in my region up in northern Ohio, because of drugs and the routes that are coming from Mexico to Columbus, Ohio, and then like a spoke out around the entire State, it is frightening. And my own neighbor is involved in some of that drug trade.

It is just—it is a continental scourge. And it doesn’t seem to me that, the way we are structured, we are being maximally effective.

And you have given a great share of your life to this, so I am very interested in the map of what is ungovernable. I am a city planner by training; I like to look at maps, and I like to understand.

I also know that, after World War II, Britain created new towns, safe places.

I think we need a different strategy that is more cosmic, less—because the current system isn’t working. It is getting worse. And China is an added complexity. But if you really look at what is going on there, I don’t think that our approach addresses the magnitude of what we are facing.

My time has probably expired, but I am very interested, in another setting, to look at the map that you might have. You are a Navy man, but I think you like land. And very interested in what is ungovernable and other alternatives to create safe havens for people, how do we do that. And I mean villages.

And what do we do about those places that are raising the plants that produce the cocaine, from an agricultural standpoint? I have never heard one person from the State Department, or any department talk about that massive transformation that occurred after 1993 that completely turned Mexico upside-down.

Thank you, Madam Chair.

Ms. MCCOLLUM. Thank you.

We now have Mr. Diaz-Balart, then Mr. Ruppertsberger, and then Mr. Carter.

COMBATING ILLICIT DRUGS

Mr. DIAZ-BALART. Madam Chairwoman, thank you very much.

Admiral Faller, first and foremost, you know, words don’t suffice to thank you for your decades of honorable service to our country. I have the privilege to have Southern Command in my district, and

I will tell you, we have had over the years, over the decades, some outstanding leaders of SOUTHCOM, but, Admiral, no one has done a better job than you have. So, again, thank you so very much.

In your testimony, you mentioned how many Americans die from illicit drugs. I think it is 87,000 in 2020 alone. And that is a result of the drug trade that originates in Latin America.

And so, very specifically, what kind—and I know that, you know, SOUTHCOM interdicts more drugs than, I believe, all of the police departments in the entire country combined. But what specifically, what resources do you need to be able to do even more? Because you literally are saving American lives.

Admiral FALLER. We do interdict, in accordance with the statute provided, the bulk of the drugs for about 1 percent of the overall budget that is associated with that effort across all the U.S. agencies. And it is indicative of being able to try to push it to the source before it gets divided into so many little packets that can ease into south Florida or Ohio or all the other places.

And the key, I think, to go back to the last question, the key is that there are good people. And our ability to leverage our values, which is our strength as Americans, and values that are common to some of these good people and create stronger institutions in our partner nations that are resilient to corruption.

And that has to be a whole-of-government effort. We have to focus on a corruption-free, strong military and police and judicial systems. And when we leave off the pressure or don't incentivize our partners to do better in a certain area, it creates a gap or a hole.

I hear from partner nations that, hey, look, we wish we had a stronger judicial system, because when the criminals get to the end in the judicial system, to quote a phrase from Costa Rica, they say, "Pura vida," which is, "Don't worry, be happy." They fear the U.S. judicial system. They respect the U.S. military, they respect our Customs and Border Protection, they respect our State Department INL. Staying consistent and investing in the institutions.

A couple programs that are important that are under-resourced: Institutional Capacity Building. It is a program, and I have enough for about three advisors for the whole hemisphere. It is funded through Section 333 security cooperation money out of an institute in California, Monterey, California, where the ministries of our partners will agree to put an advisor in there—and these are experienced, savvy, usually retired military personnel—to help them develop transparent, accountable, corruption-free budget systems. That is a small investment for a good rate of return if we fund it and if we stay with it.

There are more examples like that where we can get results. I will give you one more. A partner nation, Guatemala, their special naval forces, working with other U.S. Government agencies, we have developed a very capable, corruption-free, trustworthy special naval force that gets it done on the sea.

There are areas of that that we can spread the trust and spread the accountability, but we have to stay with it over time. And that small, focused investment does have a rate of return for a safer U.S. in every one of our cities.

NATIONAL SECURITY

Mr. DIAZ-BALART. Admiral, you also talked about—and this is not a classified briefing, so I don't expect—as a matter of fact, let me just ask a couple of specific questions about state actors and nonstate actors, as far as are they a threat to our national security interests in this hemisphere or are they not. Let me just—very briefly.

China. Is it a threat to our national security interests in the region?

Admiral FALLER. As I stated in the opening, China is the pacing threat for—

Mr. DIAZ-BALART. Yeah.

Admiral FALLER [continuing]. The 21st century and—

Mr. DIAZ-BALART. One more. How about Russia?

Admiral FALLER. Absolutely.

And I would be remiss, on the transnational criminal organizations, one of the gaps, Congressman, is that it is not reflected in our higher-level documents. So, you know, that is a decision that will be made by policymakers, and I respect that—

Mr. DIAZ-BALART. All right.

Admiral FALLER [continuing]. But it is hard to compete if we don't respect something as a threat to our national security.

Mr. DIAZ-BALART. How about Cuba?

Admiral FALLER. Cuba's malign influences are felt throughout the hemisphere. I wish it were different, but they undermine democracies. They are currently the—they are a de facto [inaudible] To keep the illegitimate Maduro in power.

Mr. DIAZ-BALART. And, lastly—and I am running out of time—Iran. Are they also a player in this hemisphere?

Admiral FALLER. The long arm of Iranian malfeasance is felt around the globe. They are the number-one state sponsor of terrorism in the world.

Mr. DIAZ-BALART. Thank you, Admiral, again.

Madam Chairwoman, thank you. My time has run out, so I yield back.

Ms. MCCOLLUM. Thank you.

Mr. RUPPERSBERGER, Mr. Carter, and Mr. Ryan will be after Mr. Carter.

CHINA AND IRAN

Mr. RUPPERSBERGER. Well, thank you, Congresswoman McCollum and also Ranking Member Calvert.

Admiral, you have served your country well. I have always felt, the amount of years that I have been in Congress—and I was on the Intelligence Committee for 12 years—that we, from a resource point of view, have not given the resources to South America, Central America, and I think we are paying for it in a lot of different ways.

And I will say that, from your perspective and your leadership, you have been able to bring the team together. You mention in your statement that intel drives everything we do, and that gives you the ability to do the things you need to do. And part of what I like from your style is the teamwork. And I am going to call out the DEA as an example. A very small organization, and they are

in a very dangerous situation, but they have done a good job. Now, with the support of the military, FBI, I think we are on the right road. Thank you for what you have done.

China's influence in Latin America continues, outside of Mexico, to be really the reason and the involvement in South America, Central America. And I am very concerned about where we are with respect to China.

And I want to give you some numbers here, that China's trade with the region overtook the United States in 2018 and extended that in 2019 to more than \$22 billion, versus U.S. trade of \$198 billion, according to analysis of the trade figures from the U.N. Comtrade database.

Now, I know that throughout the pandemic in the United States, we have had a great partner with the different countries that we are working with. But, in the end, we are looking at a situation that is getting worse and worse as it relates to China.

Now, from your perspective, what do you need to do to counter China in the region? Do you see any changes in the diplomatic front with the new administration?

And, also, to what degree do you see insecure technology offerings from China, like Huawei, or bad loan terms driving relationships between your AOR, your area of responsibility, and China? And do countries truly want to work with the Chinese, or do they want them as a piggy bank?

Now, outside of our near-peer, what type of Iranian activity are you also seeing in the region? I think you answered that question before. And I have always been concerned about their potential to stir up conflicts in our backyard.

Admiral FALLER. The focus of our National Defense Strategy on strengthening partnerships and of our SOUTHCOM strategy of strengthening partnerships is exactly the best approach to outcompeting China.

So focus, first and foremost, by looking in the mirror every day and asking ourselves, are we the best, to use a sports analogy, athletes on the field, morally, physically, mentally, and ready to take that forward to engage with our partners? And I can say we are. Now, we are not the perfect people, but we work hard at all aspects of that to get it right in the United States military and in SOUTHCOM in particular. And partners want to partner with the world champions. And that is our standard to never lose. And we appreciate your support in that.

So, when I sit with partners, they want to work with the U.S., absolutely. And we have so much in common—values in this hemisphere being at the top of that list, the great U.S.-built equipment. And we look for areas of commonality and how we move that forward.

We have to be present to do that, physically and with some level of resources. As I say, you have to be on the field to compete, and you have to be seen and heard to compete.

And I don't ask partners to choose, because that puts them often and publicly in a very cumbersome and tough situation. But I do point out, what system do you want, and do you have and do you want your children and grandchildren to grow up under, a democ-

racy or an autocracy? And it is really an easy question to answer as we move forward.

Our best way to compete is to be the best and folks will want to partner with us. But we have to be consistent and we have to stay with them in that respect.

China, they are growing in their boldness. You mentioned a number of things, Congressman. We see it with the vaccines. The U.S. is the largest contributor to the COVID health response in this hemisphere, but you wouldn't know that by some of what you hear coming out of Chinese and Russian information and disinformation. We just have to stay the course and make sure the truth is told.

Mr. RUPPERSBERGER. Okay.

I yield back. Thank you.

Ms. MCCOLLUM. Thank you.

Mr. Carter and then Mr. Ryan.

Mr. Carter.

MIGRATION HOUSING ON MILITARY BASES

Mr. CARTER. Thank you for being patient with me. I have another hearing I am trying to take care of too.

Admiral, I had a great conversation with you yesterday. Sorry to have to cut it off to go vote, but we had a great talk and I enjoyed it.

The transnational criminal organizations has been a subject that we have been talking about a lot. It is reported that over 200 violent TCOs control territory in Central and South America, and they influence government and the governance of those countries. Additionally, China and Russia are involved in the region and spreading their influence out.

As these TCOs traffic guns, drugs, money, and people into the United States, basically through Mexico, illegal aliens are being housed on military bases, such as Fort Bliss, Texas, and Joint Base San Antonio. Do you see any inherent risk to national security in housing those people on active military posts?

Admiral FALLER. Congressman, I will leave the policy of where we put them to Department of Defense and others that are looking at that.

The underlying driver, though, here—the violence, the murderous violence, the ability of these groups to use corruption to undermine governance and capture territory—is critically at the center of gravity, the center of this perfect storm. And that is what we are really trying to get after, working with all the U.S. Government agencies.

And, as we stated, the absolute criticality of intel to drive that as a way to better understand what levers need to be applied and pulled.

Mr. CARTER. Well, the way I look at it, I am concerned national security issues, but, in turn, I am also very concerned about placing children on live-fire military posts like Fort Hood, where live-fire ranges are within walking distance of where they would be housed. And most of these children are teenagers, and teenagers are very curious. And when tanks start shooting, they are going to want to go see. And I am worried about somebody getting killed. But I know that is not what your purpose is.

What you are doing on the border, though, has an influence on what is pushing this massive migration, basically, into my State. And now we are moving them to other States as they require, but it is a gigantic problem for the State of Texas.

COUNTERING INFLUENCE OF ADVERSARYS

The One Belt One Road program that the Chinese are doing, we are doing some things to counter those things. Are the things that we are doing to counter them as effective or at least somewhat effective in changing the influence that they are imposing on our Central and South American friends?

Admiral FALLER. The security and all the insecurity that you cite, Congressman, has got to be part of the economic solution. And so, when One Belt One Road and its promise of Chinese investment and access to Chinese economies, the best way to outcompete that is to use U.S. companies, incentivize their business and incentivize supply chains for the Americas, secure supply chains, that take advantage of that proximity to our country and take advantage of the tremendous hardworking labor that comes with the migration.

And so that has to be—and I think it was mentioned a number of times today: Getting development right, with the diplomacy and the security, has to be key.

And we are focused on that. We routinely meet. And we have, in our headquarters, members of the interagency groups, and we look for ways to help enable them as a small piece of the security solution to get the work done. Development Finance Corp., which was part of Congress's BUILD Act, is one such lever that shows promise, I think. And I know that our ambassadors, as I interact with them, in the region are focused on these types of things.

Mr. CARTER. You mentioned in our conversation yesterday the idea of maybe a Central and South American country Marshall Plan. And with all the money we are throwing around these days, we would have to figure out how to fund all that. But would you like to talk about that concept?

Ms. MCCOLLUM. Mr. Carter, we are going to have time for a second round, so that will give the Admiral time to think that over.

Mr. CARTER. Okay. Thank you very much. I yield back.

Ms. MCCOLLUM. And I am interested to hear the answer.

Mr. Ryan.

Mr. RYAN. Thank you, Madam Chair. Appreciate the opportunity. Thank you, Admiral.

UNITED STATES COAST GUARD CUTTER STONE

One of the questions I had—I read with great interest about what happened in March with the United States Coast Guard Cutter *Stone*, which was deployed to the South Atlantic to help curb illegal Chinese fishing. And this was the Coast Guard's first such deployment in over a decade. And the mission, we are told, was primarily a success, and the crew was able to conduct some training with several countries.

And evidently the mission hit a snag when the Argentine Government refused to provide dock services for the *Stone*. And we know that that would normally be pretty routine. And we know

that Argentina has been one of the largest recipients of funds from the Chinese Government for their Belt and Road Initiative.

And I am just interested in your opinion, if you believe that that deepening relationship with China was the reason that we were refused to be able to dock the *Stone* there.

Admiral FALLER. Coast Guard Cutter *Stone*, a national security cutter—and those are awesome ships, well-built. I have been aboard them. They are built to do a range of missions—had a very successful patrol, as you point out, Congressman, and was aimed at getting after a significant source of insecurity, which is this idea of illegal, unregulated, unreported fishing. Admiral Schultz and our Homeland Security Department have put forward a strategy for that. We are participating with them; they are in the lead. This patrol was part of that.

Last year, we saw off Ecuador a tremendously large fleet, primarily of a state-owned, Chinese, distant-water fleet, that would every day turn off their transponders and go into the ecological zone of the Galapagos. And we can only wonder what was happening when you turn those off. It is for two reasons only: You are trying to mask illegal behavior, or it is broken. And you don't have half a fleet broken at the same time.

This was meant to get after that. Argentina has had their share of issues with illegal, unreported, unregulated fishing, and we worked with their coast guard successfully.

I was in Argentina last week, had a very excellent series of meetings with the Minister of Defense and their Chief of Defense about a whole range of areas that we can cooperate on together. They want to partner with us. We talked about the Coast Guard ship *Stone's* work and exercise. It is a right level. And we got into the issue with the port. It was approved, and then we had to try to find another port at the last minute because of some port safety concerns that were raised by our Coast Guard.

So, after speaking with Argentinian authorities, I actually think it was more of a misunderstanding than any slight. They clearly want to partner with us.

They point out that China is their largest economic partner, as it is with the U.S. We have to figure out how to do that going forward and provide an incentive for U.S. business, industry, and our defense establishment to be able to sell in a competitive manner with Argentina.

Mr. RYAN. It was a safety issue, that we determined it was a safety issue?

Admiral FALLER. We canceled the first port visit based on concerns raised by the cutter's skipper. I am confident, I trust in what I heard from the Minister of Defense, the Chief of Defense there, that it was the right decision. And I look forward to the next time we can come down and do a port visit in Argentina.

Mr. RYAN. "Safety" as far as just safety of the ship or terrorism or some kind of attack?

Admiral FALLER. No. There are a number of factors. As a ship driver myself, you assess the water depth, the pier, the weather, all kind of things. And it was a decision made at the commanding officer level. I have done the same thing before a port visit, as you assess what is best for your ship.

Certainly not terrorism or any physical-threat safety to that ship. Argentina has very capable security forces, and that would have been taken care of, I am assured.

ILLEGAL FISHING

Mr. RYAN. What are the international laws governing the illegal fishing? Is there a body of law, a regime that we are relying on to try to stop it?

Admiral FALLER. Absolutely. And within nations' exclusive economic zones, they have a right to that by international law. And we see that there are nations that have distant high seas fleets that routinely violate that international protocol.

Mr. RYAN. Thank you, Madam Chair.

Ms. MCCOLLUM. Thank you, Mr. Ryan.

We have an opportunity to do another round of questions, so I am going to ask—as you can see, the timer has been set to 3 minutes. And we will start with Mr. Cuellar.

FUNDING INVENTORY

Mr. CUELLAR. Especially. Thank you.

Admiral, just give me an inventory of what we can do to address the issues that I asked on the first round of questions. Just quickly give me an inventory of items that you think we ought to fund or put the language in there. Just a quick inventory.

Admiral FALLER. Thank you.

First, I haven't seen the details of the next year's budget. Once we do, we will come forward, as you all have asked and as we have done in the past, with an unfunded requirements list. I am confident that our department has a prioritization system that is fair. We will make our case. But intel is one area and, in particular, support for ISR platforms and the ISR transfer fund.

In security cooperation, we greatly appreciate the committee's support last year to restore which had been about a 32-percent cut over the previous 3 years. And at that, at about a \$120 million level, I think we need to all ask in the Department of Defense, with that being my main muscle mover, where the money is best spent to win the competition. And I think we will make the case in our unfunded requirements based on what we see in the level for additional funds there.

And then in terms of security cooperation, locations, and presence, continued support to ensure that we have the right level of people and the right level of presence. That would include access to locations like Comalapa and Soto Cano.

Mr. CUELLAR. Okay. Good.

And, again, thank you for what you do. I am going to yield back the balance of my time. But if you can follow up with the committee on my question, we want to be very helpful. Again, I think the committee shares—I don't want to speak for everybody, but I think we share the sense of urgency of what we are seeing with those actors in South and Central America.

Admiral FALLER. If I could just add, sir, the report that you asked for is very important, because it will provide, from a respected think tank, an analysis of the needs that we can compare to our own analysis and, I think, would really inform the work of

your committee and Congress to help look at the global balance of resources that we have, recognizing we will never have enough for all the needs that we have, but where is it best applied to get the leverage we need to be competitive today and tomorrow. And I welcome that.

And I also appreciated your initiative on the Western Hemisphere Initiative. It really is the seeds for what would be a Marshall Plan-like initiative as we move forward.

Thank you.

Mr. CUELLAR. Thank you.

Madam Chair and Ranking Member, members of the committee, yeah, I was hoping this would have been ready on December 31st of 2020, but COVID hit, so it will be ready on July 31st. And this will give us a comprehensive of what we need to do with the Department of Defense, State Department, USAID, a whole-of-the-government approach for Central America. So maybe we could put a placeholder there and work on it.

But my time is up. Thank you so much, Admiral, and thank you, Madam Chair. Thank you.

Ms. MCCOLLUM. Absolutely. And I look forward to seeing the report. And this needs to be a whole-of-government approach. We need to be relying on diplomacy and development, and defense should always be our last resort.

Would Mr. Calvert—and, Mr. Calvert, could you find out if Ms. Granger is going to be able to join us back and let our staff know? I know your staff is listening, so they could just email.

Mr. Calvert.

GUANTANAMO

Mr. CALVERT. Thank you, Chair.

You brought up Guantanamo, Chair, and I wanted to get into that a little bit with you, Admiral.

I know that you recently closed Camp Seven. The chair and I were out there about, I guess—how long has that been? About a year ago, I guess. And you consolidated everything into the Camp Five, and we took a look at that when we were down there.

Could you describe the reason for this change? I think I know that. It was obviously financial, along with the daily operations related to costs. Is that working?

Admiral FALLER. I certainly appreciated visiting there with you and the chair. It was very productive, and it actually helps us to see it through your eyes.

It was principally a safety issue. That camp you referenced was never built to last, and it was in need of a number of safety upgrades. And my mission is the safe treatment of the detainees, and that is what we take very seriously. There will be manpower efficiencies associated with that, so it is good in that respect as well, but that is why we did it moving forward.

I would note, too—and you saw this when you were there, sir—is the importance of that Naval station as the only base we have in the hemisphere. Earlier I mentioned some security cooperation locations, but that is the base that reports directly to the Department of the Navy. It is a strategic location. And the detention facil-

ity that is under my command is just a small tenant of that overall strategic location and Naval station.

Mr. CALVERT. I understand that, Admiral.

One thing I wanted to bring up: As you know, the people that are left there are the worst of the worst, and that is why they are there. What, you have approximately 40 people there, including Khalid Sheikh Mohammed, the mastermind behind the 9/11 attack on the United States. Is that about the right number, about 40 of them?

Admiral FALLER. Yes, Congressman.

Mr. CALVERT. Now, the President has indicated a desire, as the chair mentioned, to close the detention facility at some point. Have you received any tasking orders or otherwise have any information that a policy decision has been made to close that facility?

Admiral FALLER. That will be a policy decision, and we will flex to however it goes forward, and we are looking forward to being part of that process. But no decision has been made, to my knowledge.

Mr. CALVERT. Finally, obviously, you have the most, in my mind and in a lot of people's mind, one of the most evil men on the planet at Guantanamo, Khalid Sheikh Mohammed.

We were supposed to set up trials for some of these folks, which never took place. Do you want to comment on what is going on with the legal process there on Guantanamo?

Admiral FALLER. The commission process is important. It is important, as a Nation of laws, that we get this right and see this to fruition. My role in this is to ensure that the commissions get the right support logistically and with security.

The commissions themselves report directly to the Office of the Secretary of Defense. And I know everybody in the Department of Defense is committed to moving forward on this line. COVID, of course, set us back some as we have worked through the protocols associated with ensuring that we don't introduce any COVID-19 at all on the island.

Mr. CALVERT. Well, you can understand, it has been over 20 years, or almost 20 years, since 9/11, and a lot of Americans are frustrated that the final justice has not been submitted to that individual. I appreciate your concern. Thank you.

I yield back, Madam Chair.

Ms. MCCOLLUM. Thank you.

Ms. Kaptur.

RISK TO LATIN AND SOUTH

Ms. KAPTUR. Thank you, Madam Chair.

Admiral, how difficult would it be for me to get a briefing listing every one of the countries that you have responsibility for under your command and to get them ranked?

So, for example, you mentioned Guatemala and the significant challenges of Guatemala. They would be underwater on such a chart, in terms of the way you look at the world. You said good things about Colombia, so they would be above the watermark. Could you do that for all the nations in Latin America to give me a better sense of which ones are deeply troubled?

And then, in those countries, how much of the land is really ungovernable, where people's lives are at risk, they are leaving? You talked about the millions of people who have fled different countries. Where can I get that information so I can gain a more granular understanding?

Admiral FALLER. We would be happy to set up a classified briefing and go through all the factors.

But I wouldn't characterize Guatemala as underwater, other than what we saw as the impacts of the hurricanes last year. There are good people and there are aspects of the Guatemala security team that I work with that are really good and working hard to make a difference. I cited one, their Special Naval Force. Their new Minister of Defense is committed to doing the right thing. He is a trusted partner. Their new Chief of Defense is the same.

And there are many reasons to be concerned about the sense of urgency with which we have to get after the threats, but we also need to recognize and play to our strengths too, which is democracy and values. And I see real rays of light with respect to Guatemala in that case, ma'am.

Ms. KAPTUR. We have a lot of people who are escaping from Guatemala and don't want to go back there. And, you know, you could blame it on the hurricane, but I think there are other reasons as well.

And in terms of the actual out-migration, does your office calculate that from these various countries, or is that some other—State Department or something?

Admiral FALLER. That is other agencies, State Department and the United Nations, that work on that data, ma'am.

Ms. KAPTUR. Do we have good maps of where opiates are being grown in the region under your command?

Admiral FALLER. Absolutely. The DIA and the CIA have the best data available and the best analysts in the world.

Ms. KAPTUR. All right. If you help me gain a better understanding, you could access that data?

Admiral FALLER. Ma'am, we can set up a classified briefing, and we will do that as soon as your availability supports. Thank you.

Ms. KAPTUR. All right. Thank you very much. Appreciate your service. God bless you. Thank you.

Admiral FALLER. Thank you, ma'am.

Ms. MCCOLLUM. Ms. Kaptur, we will also work with the staff to get you the information that the CIA World Factbook has. And the World Bank has great statistics on everything from economic development to stunting, to land title and everything else to help you be prepared for when you have your classified briefing. I found those to be excellent resources.

So, Mr. Rogers?

VENEZUELA

Mr. ROGERS. Okay.

In my conversation yesterday that I mentioned, on the telephone with President Duque of Colombia, one of the biggest topics that he brought up was the border problem they have with Venezuela—skirmishes that are taking place along the border of Venezuela,

fueled in large degree, they say, by the drug traffic from Colombia through Venezuela and to the rest of the world.

Maduro, President Maduro, in Venezuela has driven 1.7 million Venezuelans to abscond to Colombia. They are dealing with 1.7 million refugees on top of all the other problems that Colombia is facing.

Is there any indication, Admiral, that the reported skirmishes with Venezuela will escalate? And do we have any presence in that matter?

Admiral FALLER. It is a credit to the Colombians and their humanity and their heart that they have been able to accept this large influx of migrants in a way that has respected them and human rights in the midst of COVID. And it hasn't been easy, and I commend President Duque and his team and their leadership in this matter and their adherence to democracy in a really tough situation, tough times.

Because right next-door, you have Maduro and his cronies, enabled by tens of thousands of Cubans, hundreds of Russians, Chinese and Iranians, including, you know, Iranian security assistance, including cyber assistance by Russia, Russian Spetsnaz, that have created a virtual narco-trafficking paradise.

And so the significant influx of narco trafficking into Venezuela by the ELN, FARC dissidents, and other groups, the ease with which they can use that now as a base of operation to distribute into Europe, into the Caribbean islands, to the United States via Central America has complicated all of our efforts to get after the problem set.

And you cite specifically the recent clashes, which, on the face of it, would look like Maduro has turned against the narco traffickers, but it is, as in all these things, much more complicated. And then they quickly pointed and tried to blame this on Colombia, when the facts of the matter are it is more of a drug war/turf war between the Maduro security forces, which are, for the most part, led by corrupt leaders, and the narco traffickers, which share a similar values systems.

Colombia has held the line on the border.

Our role, the DOD's role, and our interagency role, with this crisis, we have used it to strengthen our relationship with Colombia, particularly in sharing intel. It is a two-way—we get some of our best intel from their teams, and we share what we know. And we have developed great protocols and systems using our security cooperation authorities in this regard.

Ms. MCCOLLUM. Thank you.

Mr. Ryan, and then we have Mr. Diaz-Balart.

SUPPORT FOR LATIN AND SOUTH AMERICA

Mr. RYAN. Thank you, Madam Chair.

I have a question. I know we were talking about some of the issues around human trafficking and stemming the flow of migrants north on that very dangerous journey that we keep hearing about.

What are we doing to help train some of our partners that are involved, you know, along the way, along that journey? Are we doing anything to help them deal with it?

And are you involved in those countries at all, helping with some of the security issues that are there? I know there is a lot of work going on with trying to, you know, build the economy, but nothing is going to happen with the economy in those countries until we get the security piece straight. If you can enlighten us on that, that would be great.

Admiral FALLER. You are absolutely right; we have to have sustainable security to support the democracies and the prosperity. The three of it goes together like the three legs of a well-balanced stool. And INL and State Department and others—DEA, CVP, and others—have the principal role, working with the police, which need to be at the front line. In many of these countries, though, the police are the most likely to be corrupted and the ones that need the most help.

They are backstopped by their partner-nation militaries. And what we have seen is the growing credibility of partner-nation militaries that turned from the insurgencies of the 1980s and 1990s to professional forces that still have a long way to go but that have made progress.

Our role in this is that professional development. It starts with education programs. The IMET program, which is congressionally appropriated through the Foreign Ops, is our main game-changer there. We bring people to U.S. schools. We are funded at about the \$11 million range. When you all ask for what more we could do, there is more that could be invested there to come to U.S. schools.

Another great program that was mentioned is our human rights program, funded out of our own budget at five people for a whole hemisphere. More could be done there if resources were available.

Women, Peace, and Security. You would say, how does that matter? But it matters a lot. And it is a nascent program that we have started, and it has proven to help our partners see how they can better leverage the 50 percent of their population to get involved in sustainable security. We have a small amount of funds, and what we have seen is it resonates with our partners as we go forward.

Noncommissioned Officer Development. Here in the United States, we value our enlisted team. Our partners sometimes see that differently. Getting them to value officers and enlisted as one team working together inclusively is key. And we are really investing, along with our State partners, in that.

So, going forward, DOD has a role to play, and we look forward to playing that role, as we work on a sustainable solution under the new \$4 billion multiyear project that is being conceived.

Ms. MCCOLLUM. Thank you.

Mr. RYAN. I yield back, Madam Chair.

Ms. MCCOLLUM. Thank you. And, Mr. Ryan, what you brought up on the fishing is something that we need to be addressing with the international community on that. I look forward to working with you more on that.

Mr. Diaz-Balart.

CARTEL RELATIONSHIPS

Mr. DIAZ-BALART. Thank you, Madam Chairwoman.

Admiral, you have talked a lot and there have been questions about the TCOs, about these organizations. Talk to me about, is there any relationship between the cartels that, you know, import arms, that traffic in arms, the cartels that traffic in humans, the cartels that traffic in drugs? What relationship do they have? Is that all they do? Like, if there is a cartel that traffics in humans, is that all they do? Or are they also the same ones or related to, have any associations with ones that traffic in drugs and other things? And, also, do they have any association or potential contacts with cartels that not only are in this hemisphere?

So, you know, talk to us a little bit about: are they a threat, who are they, why are they a threat. I understand this is not a classified briefing, but whatever you think you can share.

Admiral FALLER. When COVID struck with a vengeance and just tore at all of us, frankly—I am sure everyone here on this screen has been impacted in some way, a family member, personally—what we saw, the murderous nature of the cartels, is they expanded their business model to include PPE and COVID supplies and social services as they tried to gain influence with the population.

So there are over 200 different narco-trafficking groups, and one of the key efforts going forward has got to be to map them in rank and rack-and-stack the most important and the strongest to the less and determine the sorts of things that each one thrives on.

And it changes and changes over time. So illegal mining, business extortion, human trafficking, narco trafficking, the distribution of medical supplies, corruption and undermining of public business. Their business model revolves around basically whatever they can do to make money and keep themselves in power.

That has got to be part of how we get after it going forward, and that has been a key part of our renewed efforts.

INTELLIGENCE CAPABILITIES

Mr. DIAZ-BALART. All right.

And you have had some questions about ISR. And I just want to make sure that we kind of understand not only the importance of it, but—you talked about it before, I think it was to Mr. Calvert's question, about, you know, what percentage of ISR you get.

Are you getting enough? And I understand that nobody has enough, right? I mean, there is no command that will tell you, oh, we have too much of it. Right? But I am saying, how deficient is the level that you are getting? Is it, you know, very deficient, or are you kind of scraping by but you would like a little bit more? Where are you there?

And, actually, Madam Chairwoman, I just realized that my time may have run out, so maybe if we have a second round.

But, if not, Admiral, if you can maybe just, you know, get some information to me on that when you can.

I apologize, Madam Chairwoman, for going over.

Ms. MCCOLLUM. All right. Well, that is okay.

If you can answer that quickly.

So, if you can answer maybe in 30 seconds and then give the committee back a fuller response.

Admiral FALLER. Eight percent of our requirement was met last year, and that was before the cut of the transfer fund. And that transfer fund represented about 38 percent of our overall budget for ISR. We will be even less than that as we move through the execution here this year.

Ms. MCCOLLUM. Thank you.

Mr. Carter.

Mr. CALVERT. You know, Madam Chair, before the judge asks his question, I am going to apologize. I have to go chair my California delegation meeting, the few of us that are left. I appreciate the judge taking over for a while.

Thank you.

Ms. MCCOLLUM. He is most welcome to do that.

Mr. Carter, for 3 minutes.

MARSHALL PLAN

Mr. CARTER. Thank you, Madam Chairwoman.

Admiral, you mentioned an idea that you had of a Marshall Plan for Central and South America. Do you want to talk a little bit about that?

Admiral FALLER. I am very encouraged, sir, by the efforts of the administration to apply resources to Central America and look at a longer-term plan, \$4 billion over time, as I understand it, as it moves forward.

I mean, I think as we look globally at the challenges and then where are the opportunities, there is so much opportunity here in this hemisphere, with the people—we share so much values, democracies—the proximity, the resources, the tremendous resource-rich hemisphere. It has a positive water ratio—water is so important in the global future—and so much arable land, access, important sea lines of communication, deep harbors.

And so, if we look at the promise of the hemisphere and the resources, I think, as a Nation, is it time to look at a big idea for the hemisphere along the lines of some that we have seen in the past? And, you know, I certainly get very excited about the opportunity. The challenges and the sense of urgencies are real, but we can leverage these opportunities to make strength for the Americas, a hemisphere of promise and prosperity.

Mr. CARTER. Thank you. I like that challenge. With the spending we are doing, it is going to be interesting, how we would fund such a thing.

But one of the things the Marshall Plan did was rebuild the existing industries of the countries that had been destroyed in the war. Our challenge would be more to strengthen their existing various factories and so forth, but, in turn, our industry going down and participating in that area. And that requires a safe harbor for them to be able to do it, including a legal system that gives them recourse to protection under the law, which is one of the real weaknesses I know about in Central America. You just can't get protection from the legal system.

It is going to be a real challenge. And it will take a lot of people to go down there and straighten things out. But I like the idea that we are thinking about it. So thank you, Admiral, for doing that.

Madam Chairwoman, thank you.

CLIMATE CHANGES IMPACT

Ms. MCCOLLUM. Well, thank you, Mr. Carter.

Sir, I have one follow-up on climate change. Due to time limitation, we talked a little bit about it yesterday, but we did touch on resilience and what we needed to do to be prepared for future storms for our assets, especially in Key West—housing back-up, emergency generators, all those kinds of things, because you are interconnected with everyone on the island as well.

I know you have some of that available. Anything you want to add to that later, please provide to the committee.

BRAZIL

I have two questions. One is on Brazil. In 2019, President Trump designated Brazil as a major non-NATO ally after he visited the Brazilian President. Last month, Brazil's President fired the Defense Minister. And, more recently, the three branches of Brazil's Armed Forces all jointly resigned after meeting with the new Defense Minister of Brazil.

Can you provide us a little bit of an update on the situation in Brazil and how this has affected your relationship with the new Defense Minister, who was a celebrated military dictator, part of a dictatorship? 1964 through 1985, they killed and tortured thousands of Brazilians. Could you maybe enlighten us as to, well, what we are doing about that now?

Admiral FALLER. The designation of Brazil as a major ally, a non-NATO partner, was exactly the right thing to do to recognize the progress that has been made and the professionalism of their force. We have a great history and a foundation to work forward from, with their participation with us in World War II.

I have been to Brazil on multiple occasions, gone to their schools, met with their Armed Forces. And that is what we do; we work with their institutions. And the core of their institutions are professional and are doing the right thing and have responded in a professional manner.

I am very confident in my conversations with their Chief of Defense and others that they are going to stay that professional course. And I think that is what militaries do as the ebb and flow of politics occurs, and I think we are seeing some of that now in Brazil.

If I could just touch on that resilience question with JIATF too. So important—

Ms. MCCOLLUM. I don't have enough time, because I have one more question, so if you—

Admiral FALLER. Okay.

Ms. MCCOLLUM [continuing]. Could get back to us on that, because I want to be respectful of your time.

I am going to, in my capacity as a Member of Congress, talk to State about what is going on with the Defense Minister. I understand you have a different role that you play with that.

HUMANITARIAN ASSISTANCE

Humanitarian assistance. Last year, Congress provided \$90 million—that is 15 more than requested—for humanitarian assistance. That was under the CARES Act for the COVID response.

Before COVID, the USS Comfort and Mercy hospital ships were often deployed to do humanitarian assistance in the region. Has there been any discussion about bringing back a hospital ship to the region later this year?

Admiral FALLER. The Comfort deployments were extremely successful with the hearts and minds and helping our partner nations with their health services, which have been really stressed.

We are actively planning in the right opportunity to do medical engagement. It may be via the Comfort or a scalable air mobile concept that we are working on called Heart. We are looking at the right time for that. Many of our forces for that, our Guard and our NGO partners, play heavily in that, and, as we know, the Guard and our military is very engaged right now supporting our domestic COVID response.

So, as we plan forward, we are looking, along with the Department of Defense, of when the best window is. We certainly think there is more opportunity there for that really important program, the humanitarian assistance being coupled with that medical support. And it shows the best of who we are here in the United States with an outstretched hand of help.

Ms. MCCOLLUM. Well, I want to thank you for your emphasis and for what you discussed with me with humanitarian assistance and the role that the Department of Defense can play in development and diplomacy in that engagement.

I also, when going through with your bio—I am going to thank you for your years of service. You understand humanitarian assistance in a way that really brought it home to me: You worked on the USS Shiloh when the tsunami hit Indonesia. You know how important our military can be showing in professionalism, in the way that we can deliver aid, in the way that we can deliver service. And we do that in a way that our near-peer competitors can't.

And so, anything you would like to say in closing about humanitarian assistance would be appreciated, if you want to give this chair a little more direction on how to use the Department of Defense for that.

And, once again, thank you so very much for your years of service. We wish you good health and a wonderful retirement.

Admiral FALLER. Thank you, Chair.

And thank you for representing that experience I had on Shiloh. It really made an impression to the whole crew and all of us that winning the competition is so important and so less costly, really, than the conflict that we never want to have.

And we have to invest in winning this day-to-day competition globally, not just regionally but globally. And the modest investment in things like humanitarian assistance, hospital ships, engagement, training and education, are really key to doing that.

And we have to have that capability to bring it, but we are best when we bring it with a handshake and, when we can in the future, a hug. And thank you for recognizing that.

Ms. MCCOLLUM. Well, thank you again. We all, as you can tell from the accolades early on, you know, thank you for your service and wish you the best.

I want to thank all the committee members for their time.

So, Mr. Carter, we are going to adjourn at this time, you standing in for the ranking member.

This concludes today's hearing, and the subcommittee stands adjourned. Thank you all.

[CLERK'S NOTE.—Questions submitted by Mr. Cole and the answers thereto follow:]

ECONOMIC AND DEVELOPMENTAL AID

Question. Admiral, in your written testimony, one of the ways you highlighted the importance of this region to U.S. national security interests was by outlining the attention and presence paid to it by some competitive and/or adversarial states. The threats and opportunities on the continent are multidisciplinary. They encompass the interests, and require the attention of, a number of federal agencies and programs in a cooperative manner. Most of that we won't get into in this forum, but I will ask further about the cooperation with State and USAID in particular. For example, the U.S. role in helping to train foreign forces is about as much a diplomatic engagement as military. Can you speak to the value of that supplemental engagement and also to intersections of your mission with the role of U.S. economic and developmental aid in the region? Are we leveraging these interagency efforts with each other as effectively as some of the other nations challenging for influence in the region?

Answer. The benefits of training with the U.S. military are far greater than just increased technical capability for the partner. Every engagement builds trust with our partners and reassures them that the United States wants to partner in meaningful ways, and at the speed of relevance. When the U.S. military is present, we bring with us our values and we model professional behavior—we show our partners what “right” looks like. We have programs in place to build the institutional capacity of our partner nation forces and make them resilient to all external influences and threats; programs to help partner nations develop diverse and inclusive militaries that respect the rule of law and human rights.

The military institution does play an important role in stabilizing many countries. As we have seen throughout the COVID-19 response, several partner nation militaries have been a lead and responsible actor under complex conditions.

I do believe that economic and developmental aid are more likely to have a positive and lasting impact if there is a basic level of security in place. All military engagements with partner nations are coordinated with the Chief of Mission and Country Team to ensure alignment across U.S. Government (USG) and public and private sector efforts. I do believe that interagency coordination is strong at various levels of the USG, to include at the Country Team, and this close coordination is key to leveraging all elements of U.S. national power in a partner nation. However, there is always room for improvement and, frankly, it is always going to be more difficult for a democratic country like the U.S. to fully coordinate its efforts compared to an authoritarian government that can fully control all elements of its government and other sectors.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

Question. Admiral Faller I certainly understand how important ISR is for many missions in your theater of operation, and I suspect we share a belief that ISR availability is not only critical, but probably a nearly universal problem for U.S. forces. SOUTHCOM has raised this issue with the Committee before. I also believe manned ISR platforms continue to have an important place, along with unmanned.

So, I am also pleased this is a bicameral interest, as the Senate Armed Services Committee encouraged the Department of Defense in their FY21 report to explore enhancing ISR capabilities through modifications or increased maintenance of current ISR assets or through possible leasing of such systems. Do you anticipate support from the Department in this area? How are things progressing?

Answer. SOUTHCOM is facing a critical shortfall of Intelligence, Surveillance, and Reconnaissance (ISR) this year due to the loss of the ISR Transfer Fund, which has made up 47% of our total ISR funding over the last five years. We have conveyed our concern about this ISR shortfall within the Department and look forward to seeing funding levels for ISR when the President's FY22 Budget Request is released.

NATIONAL GUARD ROLE

Question. I was very pleased your testimony highlighted the significant role Guard and Reserve forces play in achieving your mission. These men and women are very highly trained and capable of stepping into critical roles seamlessly. I'm proud to note that components of our own Oklahoma NG/ANG have supported important SOUTHCOM missions in recent years. This may be less of a question than a shameless plug for the hard work and training put in by these men and women from my district—they are absolutely on par and professional in their occupation specialties, but I will ask if you've found in your experience that we are adequately resourcing them to be fully operational from an equipment standpoint with your active duty components?

Answer. I, too, am very proud of the significant role the National Guard and Reserve plays. These forces are outstanding partners in assisting us in meeting U.S. strategic objectives in our region. While I would defer to the National Guard Bureau on specific resourcing information, I can tell you that when they participate in our partnership events, operations, or exercises, they always arrive ready to successfully execute as needed. Their equipment has been deployable, sustainable, and interoperable with our active duty forces, as well as with our partners in many cases.

[CLERK'S NOTE.—End of questions submitted by Mr. Cole. Questions submitted by Mr. Womack and the answers thereto follow:]

STATE PARTNERSHIP PROGRAM

Question. The National Guard's State Partnership Program focuses on building partner military capacity and defense capability in 82 countries, adding more partners each year. These partnerships support COCOM, embassy, and partner nation objectives by providing or facilitating things like cooperative training and exercises, disaster/emergency response, leadership development, aviation operations, cyber defense/communications security, military medical support, and counter terrorism activities to name a few. These partnerships build enduring relationships with an effective "whole of society" approach. One critical component of these partnerships is the Bilateral Affairs Officer (BAO), which are permanent National Guard billets located in the partner nations. Can you please explain the overall importance of the SPP in your AOR and specifically address the importance of having a present Bilateral Affairs Officer in each of your partner nations? What challenges have you experienced with having the BAO billets filled? Finally, if you are funding any of these billets out of pocket, how many are you funding and why are you doing so?

Answer. The State Partnership Program (SPP) is an integral part of our engagement capability with our partners and a force multiplier in the SOUTHCOM region. The State Partnership Program enables the exchange of tremendous expertise resident in our citizen Soldiers and Airmen and fosters long-term relationships with partner nation military and security forces. SOUTHCOM fully leverages this value with 24 State Partnerships—the most of any region. Bilateral Affairs Officers (BAOs) are National Guard Bureau assigned personnel within our security cooperation offices in partner nations that assist the State and SOUTHCOM in managing and executing requirements associated with the SPP and facilitate regular contact with the partner nation. This frequent interface is a key component of building enduring relationships with our partners. They are absolutely critical to the outstanding working relationships between our partner nations, SOUTHCOM, and States coordinating program events. While I defer to the National Guard Bureau on specific issues with filling the various BAO positions around the globe, I can tell you that NGB has been very supportive in filling our BAO billets and they fund the majority of those billets as well.

[CLERK'S NOTE.—End of questions submitted by Mr. Womack.]