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[H.A.S.C. No. 116–62]

HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2021

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON INTELLIGENCE AND EMERGING THREATS AND CAPABILITIES HEARING

ON

REVIEWING DEPARTMENT OF DEFENSE STRATEGY, POLICY, AND PROGRAMS FOR COUNTERING WEAPONS OF MASS DESTRUCTION FOR FISCAL YEAR 2021

HEARING HELD
FEBRUARY 11, 2020

U.S. GOVERNMENT PUBLISHING OFFICE
40–509 WASHINGTON : 2020

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REVIEWING DEPARTMENT OF DEFENSE STRATEGY, POLICY, AND PROGRAMS FOR COUNTERING WEAPONS OF MASS DESTRUCTION FOR FISCAL YEAR 2021

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON INTELLIGENCE AND
EMERGING THREATS AND CAPABILITIES,
Washington, DC, Tuesday, February 11, 2020.

The subcommittee met, pursuant to call, at 2:39 p.m., in room 2118, Rayburn House Office Building, Hon. James R. Langevin (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JAMES R. LANGEVIN, A REPRESENTATIVE FROM RHODE ISLAND, CHAIRMAN, SUBCOMMITTEE ON INTELLIGENCE AND EMERGING THREATS AND CAPABILITIES

Mr. LANGEVIN. The hearing will come to order. I want to welcome everyone to today's hearing on reviewing the Department of Defense strategy, policy, and programs for countering weapons of mass destruction."

Before we get started, I want to introduce and thank our four witnesses before us for their contributions on this important issue: first, Ms. Theresa Whelan, Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security in the Office of the Under Secretary of Defense for Policy; the Honorable Al Shaffer, Deputy Under Secretary of Defense for Acquisition and Sustainment and the current Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; Vice Admiral Timothy Szymanski, the Deputy Commander of the U.S. Special Operations Command, now the coordinating authority for CWMD [Countering Weapons of Mass Destruction]; and last but not least, Mr. Vayl Oxford, Director of the Defense Threat Reduction Agency.

Welcome to everyone.

Over the past few years, both Russia and North Korea have employed chemical weapons and nerve agents. In Syria, pro-regime and ISIS [Islamic State of Iraq and Syria] forces use chemical weapons on civilian populations to achieve their tactical and strategic objectives.

Advances in biotechnology, synthetic biology, and gene editing are rapidly changing the playing field to allow countries and individuals acting with nefarious intent, or even just by chance, to produce biological agents in a scope and scale not yet encountered.

And adversaries are working on the development of hypersonic weapons to deliver warheads faster, possibly faster than our ability to counter them.

All of these advances are exacerbating the complexity of the world's WMD threats.

Indeed, the current coronavirus outbreak and global panic underscores how important scientific research and preparedness across the interagency is for our national and economic security.

Our four witnesses hold positions that comprise the bulk of the Department's assigned roles and responsibilities associated with aligning CWMD policy and strategy and programs, executing those programs, delivering current and future personal protective equipment and other capabilities to our warfighters, and eliminating our remaining U.S. stockpiles of lethal chemical agents.

So I am told that our witnesses have been directed by the Office of Management and Budget not to speak today to the fiscal year 2021 President's budget request, despite this hearing taking place after the budget was released yesterday. For the record, I am deeply disappointed by this directive, which violates longstanding precedent regarding congressional oversight. We have much to oversee on policy, programs, and strategy, and that oversight will be limited without a full understanding of the fiscal year 2021 budget request.

I look forward to hearing about the Department's activities to manage and counter the threat of a drastically morphing CWMD landscape.

This year, we tasked GAO [Government Accountability Office] to review the preparedness of U.S. forces to counter North Korean chemical and biological weapons on the Korean Peninsula. GAO has already highlighted many unsettling issues.

Most pressingly, we questioned whether U.S. Forces Korea planners have access to the relevant intelligence on North Korean chemical and biological weapon sites needed to effectively plan and, if necessary, conduct counter-WMD operations.

I am deeply concerned that our preparedness for a significant state-level WMD event is wholly inadequate. We owe it to the men and women in uniform to ensure that they are trained and equipped to successfully operate and perform in a contaminated environment.

In closing, there is much work to be done to strengthen CWMD policy, programs, and preparedness. This includes understanding the 2014 strategy in the context of today's threat landscape, the budget request alignment to the current strategy, and how the Department's strategy and end states are consistent with the national-level strategy and whole-of-government effort.

So I look forward to hearing from our witnesses and note that following this discussion we will move to a closed, classified session.

So, with that, before we turn to the witnesses, I would now want to turn to Ranking Member Stefanik for any comments she may have.

[The prepared statement of Mr. Langevin can be found in the Appendix on page 27.]

STATEMENT OF HON. ELISE M. STEFANIK, A REPRESENTATIVE FROM NEW YORK, RANKING MEMBER, SUBCOMMITTEE ON INTELLIGENCE AND EMERGING THREATS AND CAPABILITIES

Ms. STEFANIK. Thank you, Chairman Langevin.

And thank you to our witnesses for being here today.

The intent of this first subcommittee posture hearing of the new year is to review the Department's strategy, policy, and programs for countering weapons of mass destruction. As I have stated previously, while the DOD [Department of Defense] faces urgent challenges daily, we can never afford to lose sight of the critically important mission of countering weapons of mass destruction.

This is especially true given recent events, as we respond and contain the global impacts of the coronavirus outbreak. This evolving threat should serve as a reminder for how important our involvement is in this arena, through activities like the Biological Threat Reduction Program; nuclear, chemical, and biological preparedness plans; crisis response exercises; and the development of sound policy that guides our collective response to these types of events.

And, most importantly, it should serve as a reminder that events of this magnitude require a whole-of-government response, not limited to just the four DOD organizations represented here today, but inclusive of HHS [Department of Health and Human Services], the CDC [Centers for Disease Control and Prevention], DHS [Department of Homeland Security], State Department, and State and local officials. The relationships that you build with these agencies and the repetitions in times of peace will underpin the effectiveness of your partnerships in times of crisis.

I appreciate the relentless efforts of the Defense Threat Reduction Agency; USSOCOM [United States Special Operations Command]; OSD [Office of the Secretary of Defense] Policy; Acquisition and Sustainment; and countless other organizations to prevent, prepare, and respond to CWMD events around the globe.

While our collective conscience hopes that these weapons will never be used to wage war in the future, we need only look to the Syrian, North Korean, and Russian regimes for proof that this is not the reality of the world we live in. The pursuit, proliferation, and potential use of weapons of mass destruction remains a high-consequence threat that we must plan for.

Finally, I am interested to hear from our witnesses today how recent efforts to streamline and provide additional leadership and accountability to this problem have matured.

I am also interested in any lessons learned from the Department's response and contributions to the coronavirus efforts and how these insights are evolving our CWMD posture and our view of the criticality of the domestic industrial base and the Strategic National Stockpile.

And while I know we are not going into specific fiscal year 2021 budget numbers today, I ask each of the witnesses to highlight any specific interest items relevant to the discussion today that the committee should be focused on during our reviews of the President's budget request.

Thank you to our witnesses, and I yield back to the chairman.

Mr. LANGEVIN. Thank you, Ranking Member Stefanik.

And we will now hear from the witnesses and then move into a question-and-answer session after that.

I thank all of you for the contributions you are making to our national security.

And, with that, I would like to recognize Principal Deputy Assistant Secretary Whelan to begin.

STATEMENT OF THERESA M. WHELAN, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR HOMELAND DEFENSE AND GLOBAL SECURITY, OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR POLICY

Ms. WHELAN. Good afternoon, Chairman Langevin and Ranking Member Stefanik and members of the subcommittee. I am honored to testify today regarding the Department of Defense's countering weapons of mass destruction efforts.

The DOD CWMD enterprise's mission—to dissuade, deter, and, when necessary, defeat actors who threaten or use WMD against the United States or our interests, and to be prepared to respond to and mitigate the effects of WMD use—is, as you both mentioned, extensive and complex.

Mission success requires the expertise and collaboration of many DOD components. OSD Policy develops CWMD policy, strategies, and implementation guidance to ensure the effective development of capabilities and activities. OSD Policy also leads related interagency and international engagements.

The threats of WMD use and proliferation are rising. All of the National Defense Strategy's "2+3" actors—China, Russia, North Korea, Iran, and violent extremist organizations—have or are pursuing WMD capabilities that could threaten the United States or U.S. interests.

Further, the WMD threat landscape is continuously changing. Rapid biotechnology advances are increasing the potential, variety, and ease of access to biological weapons. Converging enabling technologies, such as artificial intelligence, heighten concerns about these developments.

OSD Policy works with DOD components and other departments and agencies to raise awareness and develop strategies to mitigate potential threats, while ensuring the United States is postured to realize the benefits offered by emerging technologies.

Through proactive collaboration and coordination, the Department leverages the distributed nature of its CWMD expertise to address WMD threats across the mission spectrum, from preventing acquisition and proliferation, to containing and reducing threats, to responding to WMD-related incidents and contingencies.

The DOD CWMD Unity of Effort Council is our collaborative and crosscutting venue for raising awareness of issues, identifying shortfalls and opportunities, and driving toward solutions. In 2019, the Council focused on four primary issues: two on the potential use of pharmaceutical-based agents as chemical weapons, one on joint force readiness for a Korea contingency, and one on enterprise-wide prioritization. The Council also continued working issues raised in 2018.

I want to conclude by highlighting OSD Policy's work to advance the three NDS [National Defense Strategy] lines of effort in the CWMD context.

The first is restoring readiness through lethality. One of our primary objectives is to ensure that our forces can operate and win in a CBRN [chemical, biological, radiological, and nuclear]-contaminated environment, which denies adversaries the benefits of using WMD.

Even before its charter was signed, the CWMD Unity of Effort Council began working with INDOPACOM [United States Indo-Pacific Command] to review CWMD-related readiness requirements and ensure it is prepared to meet them. The Council actively monitors DOD progress towards meeting requirements and, where appropriate, is addressing identified shortfalls to ensure our forces are more agile and lethal.

OSD Policy is also working to reform the Department for greater performance and accountability. To ensure the best return on investment, OSD Policy is leading an effort, through the CWMD Unity of Effort Council, to prioritize WMD threats and provide related policy guidance for the Department to organize DOD CWMD operations, activities, and investments around a cohesive threat picture.

The CWMD Unity of Effort Council prioritization anticipates DOD components will align their prioritization efforts. For example, OSD Policy will incorporate the Council's WMD prioritization guidance into our cooperative threat reduction methodologies.

Finally, a core tenet of many of our CWMD programs is strengthening alliances and building partnerships. Through work to reduce WMD threats, the Department's CTR [Cooperative Threat Reduction] program empowers partners to detect, prevent, and reduce WMD threats on their own. This reduces the burden on DOD resources, allows for greater interoperability, and reduces WMD threats worldwide.

The DOD CWMD enterprise's agility and expertise will enable us to address the existing and emerging WMD threats of 2020 and beyond. Thank you for your continued support for our CWMD mission, and I look forward to answering your questions. Thank you.

[The prepared statement of Ms. Whelan can be found in the Appendix on page 29.]

Mr. LANGEVIN. Thank you, Secretary Whelan.

Secretary Shaffer is now recognized.

STATEMENT OF HON. ALAN R. SHAFFER, DEPUTY UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT AND ACTING ASSISTANT SECRETARY OF DEFENSE FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS, OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

Mr. SHAFFER. Thank you, Chairman Langevin, Ranking Member Stefanik, and members of the subcommittee. I thank you for inviting us to testify on the Department of Defense's efforts to counter threats posed by weapons of mass destruction.

I have prepared a written statement for the record, but, in the interest of time, I would like to highlight just a few key points for you now.

While the Department-wide efforts for countering weapons of mass destruction have many key players, the Office of the Assistant Secretary for Nuclear, Chemical, and Biological Defense Programs, which I am charged to lead, is responsible for developing and fielding capabilities to deter and defend against the use of weapons of mass destruction and to provide the means to respond effectively should these weapons be used.

In that effort, we work very closely with each of the panelists before you as well as other DOD, interagency, and international counterparts to provide U.S. forces these capabilities that they need.

I think it is instructive to provide the priorities of my office. As I said, my office is the office responsible for developing and fielding capabilities for defense against chemical and biological weapons and for the safety, security, and modernization of the nuclear deterrent, in partnership with most offices in the Pentagon.

Consistent with the National Defense Strategy, our highest priority is maintaining the viability and modernization of the nuclear triad as an effective deterrent. At nearly the same level, we aim to ensure that no soldier, sailor, airman, or marine is harmed by chemical or biological weapons and, specifically, to increase emphasis on the emerging chemical and biological warfare threats that we are seeing come into the field now.

Our third major priority is to accelerate the destruction of existing stocks of old chemical weapons—the stockpile of our chemical weapons and to develop the capability to safely dispose of chemical weapons and biological weapons our forces might encounter in hostile environments.

Finally, we need to continue to emphasize rebuilding an effective and diverse workforce to be able to handle the threats of the future.

We are in an interesting time for countering weapons of mass destruction, as the convergence of a number of scientific disciplines, including artificial intelligence, synthetic biology, molecular engineering, and system-level autonomy, are opening the door for development of new challenges.

Whether it is Russia or China upgrading their nuclear forces with new and advanced nuclear weapons or the use of novel chemical weapons in 2018 in the suburbs of Salisbury, England, threats from WMD continue to evolve, modernize, and expand. In many ways, we have thrown off the old norms.

In particular, I am very concerned that, as the norms against the use of weapons of mass destruction continue to erode, those seeking to develop novel chemical weapons or push the boundaries of biology and genetic engineering for nefarious purposes continue to expand. I look forward to discussing these issues with the committee.

In closing, I will continue to work with my interagency stakeholders, my partners around this table, and our international allies to provide the capabilities to deter, confront, and defeat the use of weapons of mass destruction. Our Nation and our forces deserve this.

I appreciate the committee's continued support for these efforts, and I look forward to your questions.

[The prepared statement of Mr. Shaffer can be found in the Appendix on page 40.]

Mr. LANGEVIN. Thank you, Secretary Shaffer.

Admiral Szymanski, you are recognized.

STATEMENT OF VADM TIMOTHY G. SZYMANSKI, USN, DEPUTY COMMANDER, U.S. SPECIAL OPERATIONS COMMAND

Admiral SZYMANSKI. Good afternoon, Chairman Langevin, Ranking Member Stefanik, and members of the subcommittee. I am honored to appear before you today on behalf of the U.S. Special Operations Command in its role as the Department's coordinating authority for countering weapons of mass destruction.

Special operation forces have a longstanding operational role in countering the proliferation of weapons of mass destruction. As coordinating authority for countering weapons of mass destruction, SOCOM is also responsible for coordinating across the joint force to conduct campaign planning, assess execution of the campaign plan, and make recommendations to the Department leadership.

In its coordinating authority role, SOCOM relies on the guidance and partnership of the distinguished Department leaders here at this table. Our work is nested tightly within national Department policy and strategy, as conveyed by the Office of the Assistant Secretary of Defense for Homeland Defense and Global Security, to ensure unity of effort with the rest of the Department and U.S. Government.

We partner closely with the Office of the Assistant Secretary for Nuclear, Chemical, and Biological Defense Programs to support a robust nuclear, chemical, and biological defense posture for the joint force.

And the Defense Threat Reduction Agency supports as a combat supporting agency, providing timely information-sharing, intelligence and planning coordination, and technological solutions for the joint and special operation forces.

In the 10 months since I last updated you on SOCOM's work as the coordinating authority, world events have driven a number of changes in the landscape of nuclear, chemical, and biological threats, while other changes continue to evolve in ways that are harder to measure. Additionally, SOCOM remains focused on countering the global threat from violent extremist organizations, but the command and coordinating authority role have oriented to also address great power competition.

What has not changed is the need for informed, coordinated action across the U.S. Government and a close relationship of trust with our partners and allies. As DOD coordinating authority, our goal is to position the Department to support just such coordinated action and nurture those key relationships to prevent the emergence of weapons of mass destruction capabilities, protect the United States and its citizens and our national interests from threat actors either developing new or advancing existing programs, and respond to and mitigate the effects of any use.

I refer you to my written statement for additional information regarding our approach to this mission and look forward to your questions.

In closing, I would like to thank the members of this subcommittee once more for their support of this important national security mission. It is a privilege to work together with Ms. Whelan, Mr. Shaffer, and Mr. Oxford every day to keep our country safe from nuclear, chemical, and biological threats. I look forward to our continued partnership with them, with Members of Congress, and with our interagency and international partners to ensure our safety now and into the future.

Thank you.

[The prepared statement of Admiral Szymanski can be found in the Appendix on page 53.]

Mr. LANGEVIN. Thank you, Admiral Szymanski.

Director Oxford is now recognized.

STATEMENT OF VAYL OXFORD, DIRECTOR, DEFENSE THREAT REDUCTION AGENCY, OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

Mr. OXFORD. Chairman Langevin, Ranking Member Stefanik, distinguished members of the committee, thank you for your continued support to the Defense Threat Reduction Agency [DTRA].

I am pleased to join my colleagues appearing before you today. They represent the key leaders in the Department to counter the threats associated with weapons of mass destruction.

I also am proud to represent the men and women of the Defense Threat Reduction Agency, an agency that in the last year was designated as a mission assurance center of excellence for the Department based on our vulnerability assessments of defense critical infrastructure around the world.

We advanced the development of advanced nuclear weapons effects to help STRATCOM [United States Strategic Command] based on NPR [Nuclear Posture Review] requirements. We participated in a New START [Strategic Arms Reduction] Treaty mission and the exhibition of Russia's newest strategic delivery system, the RS–18 variant 2 ICBM [intercontinental ballistic missile] Avangard, that is designed to deliver the hypersonic glide vehicle that is to be nuclear capable.

We expanded the application of artificial intelligence and machine learning to a variety of our data analytics efforts, to include applications to build 3D models of underground facilities based on intelligence and geospatial data.

Our Integrated Munitions Effects Assessment was designated as the enterprise solution for supporting the warfighter for combating weapons of mass destruction and hardened and deeply buried targets.

Catapult, our mission-driven data analytics platform that integrates over 1,100 data sources, was approved as a program of record.

Continued support with CENTCOM [United States Central Command] and SOCOM was necessary to counter Iranian nuclear ambitions and to continue to pursue the D–ISIS [Defeat ISIS] campaign and to confront the Taliban threat in Afghanistan.

Since appearing before you last, the Agency has continued its pivot towards the goals of the National Defense Strategy and to confront the ever-complex and dynamic threat environment composed of state and non-state actors, along with their proxies and surrogates. This environment places increasing demands of working across DOD, the interagency, and with international partners.

Further, the adversaries we have faced have spent decades developing globally connected networks, requiring us to adopt global partnerships and a global perspective to fully identify the threat networks associated with China, Russia, Iran, and the DPRK [Democratic People's Republic of Korea]. To address this global nature of the threat, we have amplified our partnership with USSOCOM to take on additional support for the geographical commanders responsible for dealing with these adversaries.

Beginning in 2018, I directed a full bottom-up review of the Agency's programs and personnel to make sure that we were aligned and focused our efforts on strengthening the nuclear deterrent, tailoring our support to the conventional force, and evolving our counter-threat network capabilities from a unique focus on VEOs [violent extremist organizations] to a threat-based focus on all the adversaries in the National Defense Strategy.

In doing so, we recognized that we must confront and overcome several key challenges: scaling our network analysis approach from the D–ISIS, Taliban, and al-Qaida threats to a globally connected nation-state threat; recognizing that actions against nation-states to compete in the gray zone requires a different decision calculus than countering terrorist networks, thus necessitating even closer relationships with the combatant commanders, OSD, the Joint Staff, the interagency, and our international partners; and, most importantly, recognizing the need to more fully understand the intentions and motivations of near-peer competitors.

I will close with two recent examples of long-term efforts paying off in significant ways.

First, the CTR program's biosurveillance program work with Thailand enabled their officials to detect their country's first case of the novel coronavirus outbreak, thus helping them mitigate further spread of the disease.

Second, the FDA [Food and Drug Administration] recently licensed the first and only Ebola virus disease vaccine, made possible by DTRA research and development. With hundreds of thousands of doses now administered across the U.S., the EU [European Union], and Africa, it is protecting healthcare workers, reducing the allure of Ebola as a threat agent, and better protecting the warfighter.

Again, thank you for your support of the Agency, and I look forward to your questions.

[The prepared statement of Mr. Oxford can be found in the Appendix on page 64.]

Mr. LANGEVIN. Thank you, Director Oxford.

Members will now be recognized for 5 minutes. I will begin by recognizing myself for 5 minutes.

Secretary Whelan, how is the Department thinking about biotechnology and synthetic biology and other nontraditional materials and capabilities that could be used to cause mass destruction?

Ms. WHELAN. Thanks, Congressman, for the question. Actually, this is a very important issue, and we are glad that you are raising it and raising the awareness. It is one of great concern to us that we have been looking at from a policy perspective, and I will let my colleagues also comment on what they are doing specifically in their areas of expertise.

We have actually funded the National Academy of Sciences to do a study for us on the changing nature of biodefense threats and potential security vulnerabilities to give us some overarching perspectives on it.

But we are very concerned about the linkage between new biotech capabilities and new computer-based AI, artificial intelligence, that can enable and lower barriers to access capabilities to use new biotechnology in nefarious ways.

So this is something the Department is concerned about, and I will ask my colleagues if they would like to comment on what they are doing specifically to address the issues.

Mr. OXFORD. Mr. Chairman, if I could, when we look at the nefarious ways that synthetic bio could be used, it can be used to direct modifications to the human genome, allowing for new pathogens to be created. Known pathogens can be started from scratch without a lot of advance warning. They can engineer and produce novel pathogens that have never existed before. We can make pathogens more dangerous, more transmissible, more virulent in their makeup.

Within the Agency, working with Mr. Shaffer's NCB [Nuclear, Chemical, and Biological Defense] office, we have undertaken several different initiatives to counter this threat.

First of all, we are increasing our hazardous assessment of emerging threats based on large datasets to inform future capability development.

We are developing new hazard prediction models with data produced from threat agent science.

We are also developing detectors capable of detecting broad levels of emerging threats; similarly, developing diagnostics to rapidly provide the warfighters assessments of the threats they face.

We are also developing medical countermeasures to start to address some of these novel agents that may appear on the battlefield in the future.

Those are just a few of the examples of what the chem-bio development research program that we execute on behalf of Mr. Shaffer's office is attempting to satisfy.

Mr. LANGEVIN. Thank you, Director.

Secretary Whelan, there has been increasing attention to disease surveillance and response globally, particularly as the coronavirus crisis accelerates. A global biological pandemic would arguably present the single biggest threat to the U.S. short of a nuclear war.

Considering the ongoing response to the coronavirus, what are you learning about the gaps in the Department's ability to respond to large-scale biological events, whether manmade or naturally occurring?

Ms. WHELAN. Thank you, Congressman.

So we have been—we are actually still in the middle, obviously, of supporting our colleagues, particularly at HHS and DHS and

CDC, in responding to the coronavirus. And certainly, within DOD, our Health Affairs Office has issued some of its own guidance to the force for their health protection.

We are still assessing how this could impact us more broadly. We have our office's NORTHCOM [United States Northern Command] and our defense planning offices have looked at planning for pandemics. We have faced this problem before with H1N1 [influenza A, swine flu] back about 10 years ago, and then we recently faced it looking at Ebola in West Africa. So we are constantly absorbing the lessons learned and using them to address our force protection.

But let me turn to Mr. Shaffer for some of his comments.

Mr. LANGEVIN. Yes. I am particularly interested in the gaps in the Department's ability to respond.

Mr. SHAFFER. Sir, I think that, as Ms. Whelan said, we are still in the middle of analysis. I have the Defense Logistics Agency that comes underneath my portfolio. They are involved every day in a whole-of-government approach in a telecon and emergency response meeting.

They are gathering up where we are with respect to ability to fulfill the supply chain. I do think we have to look at ability to mass-produce vaccines, develop and mass-produce vaccine in a very short order. We have to balance some of the FDA restrictions on rapidly deploying vaccines with the help that they will give.

But I think it will take some time to deconstruct where we saw the specific gaps in the supply chain. My job is worrying about the supply chain and then in other parts of the policy response. We are committed to doing that. And I will come back with a supply chain answer after we have a chance to analyze it.

Mr. LANGEVIN. Okay, good. Thank you.

Director Oxford, any comment?

Mr. OXFORD. So, Mr. Chairman, one thing I would bring to light is what we talked about when we talk about synthetic bio and couple that with the announcement that was made last night with the Chinese hacking Equifax. If you couple that with the other hacking they have done over time, of Anthem, Marriott, et cetera, OPM [United States Office of Personnel Management], the large database that is being created, in conjunction with what we do in outsourcing our genetic engineering to the Chinese because it is cheaper, you can imagine what the potential outcomes are.

So we ought to be looking at this as not necessarily a dangerous road but we ought to be looking at it from what we can understand about transmissibility and those kinds of things in case there were a separate kind of outbreak.

Mr. LANGEVIN. Very good. Thank you, Director.

Ms. Stefanik is now recognized.

Ms. STEFANIK. Thank you.

Mr. Oxford, the Cooperative Threat Reduction Program has been a valuable tool that DOD uses to proactively reduce the threat posed by weapons of mass destruction through partnerships with foreign countries. And, in fact, I have had the opportunity to learn more about those as I have led congressional delegations.

Last year, Congress increased the amount authorized and appropriated by $35 million. Can you explain the return on investment

of the CTR program and also explain its importance nested under the National Defense Strategy?

Mr. OXFORD. Yes. Thank you for the question. And, again, when we receive adds like that, what we do is we sit down with Mr. Shaffer's office and Ms. Whelan's office and we go through a prioritization across the globe to make sure we are applying those in the most applicable way.

Since I took office, I have made an emphasis of not only accounting for the National Defense Strategy priorities but also working more directly with the combatant commanders to make sure we are operating in the right locations within their geographical areas, as they understand the region better than we might in DC, just to make sure we are putting the right pressure points on the system.

So I think what you have found over time, when you go to places like Jordan, when you see the Philippine coastal watch center, and what I mentioned about the work that we have done in Thailand that identified the coronavirus very quickly, there is value added throughout the world with these programs.

Ms. STEFANIK. Next question is for Mr. Shaffer. This is somewhat of a follow-up to the chairman's question.

Obviously, in the midst of the coronavirus outbreak, concerns have been raised that the Strategic National Stockpile isn't sufficiently prepared to deal with emerging diseases. There are legitimate concerns about shortages of medicines, health supplies, surgical masks, and vulnerabilities in our supply chain when the manufacturing of these items has moved to China.

So how is DOD building resilience into its stockpile of chemical and biological supplies? And what are we learning from this particular instance with the coronavirus experience?

Mr. SHAFFER. Congresswoman, that is a terrific question.

As I tried to explain, we are still in the process of understanding where our gaps and shortfalls are. I think we all recognize that, not just in the chemical-biological agent area but in a large number of areas, we have outsourced our manufacture of critical equipment. You talk about chemical-biological effects. I look at microelectronics, where we don't have nearly enough indigenous capacity. I think that is a nationwide problem.

We are going to come back and take a look at what we have to do for chemical and biologic defense for our troops. And then, getting beyond that, we will work with CDC and other parts of government for a whole-of-government response.

My concern really is for our troops that we deploy and making sure those troops and the families that are with them have the protection that they need, have the right antidotes, have the right protective gear. But it is something I think we all have to step back and take a look at, are we prepared for this type of event.

Ms. STEFANIK. And the reason I emphasize it, I know it is repetitive of the chairman's question, but it is really important to learn the lessons. And there are concerns on both sides of the aisle to make sure that we apply what we are learning today of the shortfalls and make sure that we address in the future.

Admiral, SOCOM has now been the coordinating authority capacity for 2½ years. Can you explain how SOCOM views this responsibility and what specific actions the command has taken to

better coordinate countering-WMD activities across the Department?

Admiral SZYMANSKI. Yes. Maybe I can start with the second half of the question first, on the coordination piece, because I think, since we briefed you last year, we have aligned with the NDS in concert with, you know, my great colleagues here at the table.

But we have been able to take—if you recall, our functional campaign plan is based on a model of pathway defeat, in the opening statement from Secretary Whelan, from acquisition to use.

We have been able to take key objectives and tasks and lines of efforts in that and build that into the global campaign plans of three other combatant commands. Two of those are still in draft, two of the threat actor nations that the other geographical combatant commanders have that global campaign response for across the lines of prepare, protect, and respond.

So that is one. We have been able to actually integrate some of the concepts, the key tasks and objectives, into our globally integrated exercises that the Chairman is using, and we have been able to develop a common operating picture, with the great help of DTRA, on all of our DOD-wide operations, activities, and investments to see that in real time on the Joint Staff's common integrated—COP [Common Operational Picture].

What was the first part of your question? I answered the second.

Ms. STEFANIK. You know, you are 2 years into being the coordinating authority. It was broad; how you view this responsibility, and then what specific action. So I think you covered it, and we can get more into detail in the closed session.

I will yield back.

Mr. LANGEVIN. Thank you, Ms. Stefanik.

Mr. Larsen is now recognized for 5 minutes.

Mr. LARSEN. Thank you.

Mr. Shaffer, soon after coronavirus was discovered, the Chinese mapped the genome and blasted that out into the scientific community so that folks could start working on diagnostics and vaccine development. Now, the diagnostic kit was developed fairly quickly, but the vaccine is probably 4 months away, 5 months away from test and probably a year away or maybe slightly less from being okayed.

What role are you all playing here in the United States, maybe with the CDC or without, to kind of facilitate a solution on that? And then what is the broader lesson as well?

Mr. SHAFFER. Thank you, sir.

So I think you hit it in your question. The role of the Department of Defense is to support HHS and CDC in developing a vaccine. We won't take lead in that. We will make our facilities available for test, but we are in a support role for the greater health emergency.

I do think we have to take a look at lessons learned, at how long does it take to create a vaccine that can be used, and then how do we think about taking time out of that equation. And I think that is something we are all going to have to discuss over the next coming months.

There are ways to cut some time out. It comes with risk. And it is like everything, it is going to be a risk-versus-value assessment.

But we need to look at taking time out, and we will support the CDC in every way possible.

Mr. LARSEN. Okay.

So, Mr. Oxford, the downside of this is that the genome of the coronavirus was mapped pretty quickly and blasted out to the rest of the world, and you probably saw it and said, "Oh, no, I have to do something in defense about this." As opposed to an offense, create a vaccine, you have to figure out what this might mean for defending against its use against anybody, including our folks.

How have you all approached that at DTRA?

Mr. OXFORD. So, again, you know, our posture this time versus the Ebola outbreak is really to be in support of HHS. They have a lot of leadership there that didn't exist in 2014, so they have taken the reins on this.

What we are looking at are things similar to what I mentioned before. If this were a different kind of virus that posed a lot more serious consequence, what should we be doing at that point in time?

And Mr. Shaffer has hit on this as well, that, you know, one of the things, if you are in the offensive chemical business, you do, you develop countermeasures alongside of that. We don't have that luxury. So what we have to do is get out in front of it with the science, as I mentioned before, looking at what the potential emerging threats are and starting to look at broad-based medical countermeasures ahead of the threat.

In the closed sessions, we can talk about some of the other research that we know are going on and what measures we are already taking, because we know they are happening.

Mr. LARSEN. Yeah.

So coronavirus presumably is a natural bio threat, but synthetic drugs like fentanyl aren't. And so I think we can probably all relate, as Members of Congress, in our districts to the opioid crisis and the role that opioids play, including fentanyl.

But that is as a domestic crisis. Are you looking at fentanyl as a bioweapon, a synthetic bioweapon? And what steps are you taking?

Mr. OXFORD. Absolutely. In fact, we have done this, again, in conjunction with the chem-bio defense program under Mr. Shaffer's guidance. Since we were last before you, we have actually done field trials with live agent. We have done it here in the U.S., as well as with the Brits in the U.K. [United Kingdom].

I can tell you in the open session that the results of those tests say that fentanyl is about equal to VX [nerve agent, synthetic chemical compound] in terms of its lethality. Carfentanyl is a thousand times. So, if you reverse that, what that means is a lot less agent to cause the same kind of damage as VX.

We also know that the materials, fentanyl and carfentanyl, will persist in the environment, soil and water, for weeks to months. So it is not something that just goes away, as chlorine will. So it poses other challenges for long-term operations.

We can talk about force protection and some of the other features in the closed session.

Mr. LARSEN. Yeah.

And then in your testimony and in our discussion in the last couple weeks, you talked about the transition more from threat-based to network-based, looking at threats to more networks. Can you discuss any of that in this open session?

Mr. OXFORD. We can talk a lot more in the closed session, but one of the things—I would go back to some of the other questions about getting out in front of these—these—the exporting of capability, for example, to China.

We need to be looking at the supply-chain network both incoming and outcoming from this country. We need to identify what components others may be relying upon U.S. technologies that we want to identify up front, as well as what they may be exploiting within universities and those kinds of things.

So there is a lot there that the network analysis will illuminate, as the ranking member mentioned. What this does is allow us to use the authorities of the interagency, like Commerce and Treasury, to act on information the Department of Defense can develop.

Mr. LARSEN. Thank you.

Mr. LANGEVIN. Thank you, Mr. Larsen.

Mr. Conaway is now recognized for 5 minutes.

Mr. CONAWAY. Thank you, Mr. Chairman.

Panel, thank you all.

Turning to something a little more mundane, but can we get an update on our Chemical Demilitarization Program? It has had a couple of Nunn-McCurdy breaches in the last 8 years. We have another billion in spending this year. Are we going to make the 2023 deadline?

And I guess I would ask Mr. Shaffer—you looked like you were about to answer that—can you give us a status on that overall program?

Mr. SHAFFER. Yes, sir, we will make the December 2023 deadline, and we will actually beat it. We have a new program manager that we put in place of it.

When we get upstairs, I will have a placemat to put in front of you.

The destruction has gone up remarkably in Colorado at the Pueblo Arsenal. And we have started destruction in Bluegrass in Kentucky against the other major stockpile.

We are also bringing on line three additional static detonation chambers. To a layperson, you can think of, we heat the thing to such a degree that it vaporizes the entire munition.

Yeah, we are going to make it.

Mr. CONAWAY. On our budget?

Mr. SHAFFER. Oh, absolutely. We will not be asking—well, it depends, sir. On our original budget estimate or what we have right now? We will make it on the budget estimate for right now. We will not go higher.

Mr. CONAWAY. The other question was, the report that you just said you had, you were looking at accelerating—or ways to accelerate the destruction. And that is what you are talking about there, that you may get it in ahead of time?

Mr. SHAFFER. Yeah, bringing on—so we have done a number of things. We are bringing on additional static detonation chambers. We are working with the local State environmental agencies to in-

crease our throughput. We are going to 24-hour operations in some cases.

And the increase in the rate of destruction of the existing stockpile is remarkable. I think, as of a year ago, we were somewhere under 20 percent. I have Dr. Charles Ball behind me, who is responsible for this. Within the next couple of weeks, we will be over 50 percent destroyed at Pueblo.

Mr. CONAWAY. All right. Good news.

Thank you, Mr. Chairman. I yield back.

Mr. LANGEVIN. Thank you, Mr. Conaway.

Ms. Houlahan is now recognized for 5 minutes.

Ms. HOULAHAN. Thank you, Chairman.

Mr. Shaffer, my first question is for you. It is my understanding that the GAO completed a report about 5 years ago that established that the Department had made progress at researching, developing, and making available medical countermeasures against biological threats but did not use its established process for annually updating its list of threat priorities.

From there, it is my understanding, as well, that the Department concurred with the GAO's findings and identified steps to address their recommendations.

Can you, in this environment, possibly share with us what the Department has done over the last few years to implement a process to ensure that the biological threats list is prioritized appropriately?

Mr. SHAFFER. So, ma'am, I hate to say this, but 5 years ago I was departing the Department, going for a great 3 years in Paris, and no one has talked to me about this GAO report. So let me take this one for the record and get a better answer back to you.

Ms. HOULAHAN. Thank you. I would appreciate that one.

Mr. SHAFFER. Yes.

[The information referred to can be found in the Appendix on page 89.]

Ms. HOULAHAN. And my second question actually sort of relates to that as well. I am concerned that we don't give enough attention to biological and chemical weapons and spend a lot more time thinking about nuclear threats than we possibly should. And I am just trying to make sure that we have a really—what are we doing to make sure that we think about these issues and that we are addressing these in an adequate way?

How are we making sure that we are having adequate investments in biological threats and that we are not spending our time in threats that are potentially antiquated in some ways?

Mr. SHAFFER. Yes, ma'am. I presume that is for me. So I will answer this in kind of a broad perspective.

When I took over responsibility, I looked at where we were, what our investment priorities were. I had to hire a new Deputy Assistant Secretary of Defense for Chemical-Biological Defense Programs. My charge to her was, we have got to increase emphasis on nontraditional agents.

Nontraditional agents include fourth-generation nerve agents, they include pharmaceutically based agents, and they include biological agents from either genetic modifications, synthetic biology, and that like.

Her job is to increase our investment, shift our investment portfolio. I have run that up through the leadership.

This will be crass, but one of my first tasks to her—I will clean it up—was by this April develop a scare-the-heck-out-of-them briefing for senior leadership within the Department. We will be happy to bring it over to you. When we get into the classified environment, the things that we are seeing are among the most worrisome that I have seen. I came on Active Duty—I shouldn't tell you this—in 1976. I am concerned with where the threat space is going——

Ms. HOULAHAN. So, sir——

Mr. SHAFFER [continuing]. And she has to get it right.

Ms. HOULAHAN. So, sir, I am deeply concerned as well, and I, you know, did not come on Active Duty in 1976 but, rather, in 1989, but these are the things that keep me up at night. Do you feel as though the President's new proposed budget adequately, kind of, reflects these priorities and where the threat currently is vis-a-vis nuclear versus biological versus chemical?

Mr. SHAFFER. So I will tell you that the President's budget does have a fairly good investment for chemical-biological programs.

Within that portfolio, I have tasked Dr. Vann [Deputy Assistant Secretary of Defense for Chemical and Biological Defense] to shift the emphasis. We can do some of that within the year of execution. I am actually really targeting fiscal year 2022 to come in with a significantly altered investment profile.

We are where we are, but we are going to work it very hard to get the profile right.

Ms. HOULAHAN. And do you think, proportionate to the nuclear threat, that the President's budget is a good representation, an accurate representation of our concern, the things that keep you and I up at night?

Mr. SHAFFER. So my answer will probably surprise you. Yes, it does, only because of what I am seeing also in the nuclear enterprise in China and Russia.

We are seeing just really, really aggressive behavior in all three forms of weapons of mass destruction from those nations, from Iran, from North Korea. So I have a hard time parsing out any particular weapon that could kill literally hundreds of thousands of people. It could be chemical, it could be biological, it could be nuclear. All three are very, very challenging threats.

Ms. HOULAHAN. And you would probably be surprised, as well, to hear that I am also concerned about all of those three threats, and I just want to make sure we get it right——

Mr. SHAFFER. Good. So do I.

Ms. HOULAHAN [continuing]. Spend the right kind of resources. Thank you. I yield back.

Mr. LANGEVIN. Thank you, Ms. Houlahan.

Mr. Scott is now recognized for 5 minutes.

Mr. SCOTT. Thank you, Mr. Chairman.

As we talk about countering these threats, it is obviously not just the U.S. but our partner nations that are helping us counter them.

And, Mr. Oxford, you mentioned the Chinese hacking Equifax. There is public reporting that China has threatened Germany, Denmark, and France that if Huawei is discriminated against or not selected in the development of their networks that there will

be retaliation, economic retaliation, from China towards companies from those countries.

We have seen the U.K. move forward with Huawei network integration. That is obviously a concern for many of us on this committee and throughout the United States. And we expect that other nations—obviously, some have chosen not to and are being threatened. Some will choose to use the cheaper solution.

My concern is with regard to intelligence-sharing and the potential exposure of sources if we share across with an ally that is using the Huawei network.

So my question, Mr. Shaffer, I guess is for you. When we talk about acquisition efforts with the United Kingdom or with other partner nations who are using Huawei or other companies that we deem to be not safe for us to transmit sensitive information through, what issues do you see moving forward with these types of bilateral engagements with countries that are our friends and partners if they are using Huawei to design their networks?

Mr. SHAFFER. Sir, the use of Huawei by our closest allies and friends is a concern. There is an awful lot of activity going on at the diplomatic level. If we do not believe a nation can protect information, we will not share it with them. And I think anything else we say is probably best saved for the closed session.

Mr. SCOTT. Okay.

Mr. SHAFFER. But you hit upon a very strong concern. It is a strong concern by Secretary Esper. It is a strong concern by both myself and my boss. And when you look at the convergence of digitization of data with artificial intelligence that Mr. Oxford just talked about, there is a substantive threat to the Nation. And I will just leave it at that.

Mr. SCOTT. I will accept that. And I would just make one further statement. I mean, hacking is something that you expect from a rogue nation or from a terrorist organization. China is one of the largest nations in the world, one of the three most powerful nations in the world. The fact that they conduct themselves this way is of great concern to me and, I know, the committee as a whole. And I will leave it at that and wait until we go behind closed doors.

And, Mr. Chairman, I would yield the remainder of my time.

Mr. LANGEVIN. Thank you, Mr. Scott.

Mr. Bacon is now recognized for 5 minutes.

Mr. BACON. Thank you very much. I thought I wasn't next in line.

First of all, I appreciate all of your expertise here today——

Mr. LANGEVIN. Mr. Bacon, I misspoke. I apologize.

Mr. BACON. Okay.

Mr. LANGEVIN. Mr. Gallagher is now recognized for 5 minutes.

Mr. BACON. That is what I was thinking, too.

Mr. LANGEVIN. Yeah.

Mr. GALLAGHER. I assumed that it is because Bacon is a general and I am just a captain, but——

Mr. LANGEVIN. My apologies.

Mr. GALLAGHER. That is fine. That is fine.

I don't know who to direct this to. Possibly to Mr. Shaffer.

How much have recent advances in synthetic biology and our ability to, sort of, literally print organisms—right? We are not just

talking about CRISPR [clustered regularly interspaced short palindromic repeats], rearranging the A, T, C's, and G's. We are sort of printing sequences of A, T, C's, and G's. There is sort of a commercial market for that.

Give us a sense of how that has changed the threat picture and where we are relative to the Chinese in that space.

Mr. SHAFFER. So I will tell you, I have a very good staff. I am not the biological expert, but my understanding is that the U.S. still leads in these technologies, but there is an awful lot of information, intellectual property flow to China.

We know the Chinese are very good. We know that they are using advanced techniques. I think it is something we have to monitor very closely.

And the whole business of academic freedom and academic research, coupled with national security, is something we all have to think about in the information age. What is the risk-payoff benefit between total openness of information and ability to do very exquisite data mining?

And this is something I think we—as a technologist, I can explain where the opportunity is, where the threat is, but we are really opening up a really significant policy debate, sir.

Mr. GALLAGHER. Yeah.

I don't know if anyone on the panel has thoughts on—I mean, we are seeing the emergence of companies that are manufacturing and printing organisms right now, which is stunning.

To what extent does DOD think about that as an area where we need to invest further? I would just open it up, if anybody does study these issues.

Mr. OXFORD. I think, similar to the question that Ms. Houlahan asked before, it depends—I mean, there is plenty of money in chem-bio research; it is a matter of focus. So I think it is a matter of, what is our purpose for getting into that field versus what the Chinese and others may be doing.

So I think it is really a matter of focus and intent that we have to look at. We would be doing this for the right reasons; they may not. So I think it is really the focus that I would go to.

Mr. GALLAGHER. Quickly, and this may be relegated to a classified session, but to what extent when we war-game scenarios on the Korean Peninsula are we including the assumption that the DPRK will initially use biological and chemical weapons?

For example, the thousands of artillery pieces that are built into Kaesong Heights that can range Seoul will be armed with chemical and biological weapons. Is that a worst-case scenario we plan against? Do we plan against it at all?

Ms. WHELAN. Congressman, yes, absolutely. I mean, we have to be ready to operate in a CBRN-contaminated environment.

And, in fact, our readiness to operate in such an environment, we believe, hopefully, is a bit of a deterrent to the use. If we can show that no matter what you throw at us, our forces are still going to be able to operate effectively, we think that might actually serve as a deterrent.

But, yes, we do plan for that. More detail would have to wait until the closed session. But it is absolutely on our radar screen.

Mr. GALLAGHER. And just one quick follow-up. And I do hope we can follow up in classified session. I mean, it is one thing to allow our troops to operate in such an environment, but when you are dealing with the second-largest metropolitan area in the world, I mean, there are limits to our ability to minimize civilian casualties in such a scenario, correct?

Ms. WHELAN. Yes, there are. That is right.

Mr. GALLAGHER. Okay.

Well, with that, in an effort to get to the classified session, I will yield the minute and 2 seconds I have left.

Mr. LANGEVIN. Okay. Thank you, Mr. Gallagher.

Ms. Slotkin is now recognized for 5 minutes.

Ms. SLOTKIN. I apologize. I am just coming in, so I am going to yield my time and just listen, because I don't want to take us off track.

Mr. LANGEVIN. All right. Thank you very much.

Now Mr. Bacon is recognized.

Mr. BACON. Thank you. I appreciate that, Mr. Chairman.

And I appreciate you coming in and sharing your expertise today, to our great panel.

I have three questions. I am going to direct them, and try to keep the answers succinct, if you would.

My first question is to Ms. Whelan and Mr. Shaffer. If a WMD attack or accident occurs, the United States may need to be able to treat massive numbers of casualties quickly. This will likely create a demand on emergency and medical services that would overwhelm local or regional available resources. And so, like, at UNMC, or University of Nebraska Medical Center, we have a great capacity to treat bio emergencies, and we are trying to expand upon that.

So my question is, to Ms. Whelan and Mr. Shaffer, what are we doing to ensure that we have the capacity at the national level to effectively respond to a WMD-scale event, in terms of medical facilities, beds, and specialized training?

Thank you.

Ms. WHELAN. Thanks, Congressman.

So, on the DOD side, we actually have a CBRN Response Enterprise that we have put together over the last two decades. And we have about 18,000-plus, give or take, Active and Reserve forces who are trained to be able to support the local first responders and, obviously, FEMA [Federal Emergency Management Agency].

We work through FEMA at the national level and would only be engaged, at least with our Federal and Reserve forces, through FEMA at the national level. At the State level, obviously, the National Guard can come into play under State authority.

So we are prepared to support if there is a domestic event.

Mr. BACON. Mr. Shaffer, anything else to add?

Mr. SHAFFER. No.

Mr. BACON. Okay.

My second question is to Admiral Szymanski and Mr. Oxford. At the University of Nebraska Omaha, we have the National Strategic Research Institute, which is a university-affiliated research center that is focused on technologies for detecting and countering nuclear, biological, and chemical weapons as well as disease outbreak.

Can you speak to the importance of these kind of university-affiliated research centers in building our ability to detect and respond to WMD events?

Mr. OXFORD. Congressman, I think one of the things that would be interesting is we have used the center in Omaha to actually attract future talent. We fund some of the research out there.

We have also used some of the staff expertise within the office to actually help us start to war-game some of the advanced threats. For example, we just ran a limited nuclear war game within the agency to find out what challenges we may have confronting, for example, Russian use of nuclear weapons. It was talent that was out at the facility that we actually used.

Mr. BACON. Uh-huh.

Admiral SZYMANSKI. I think, generically, to all those affiliated universities, SOCOM uses a number of universities for different aspects of SOCOM's enterprise and its portfolios. And just recently we conducted a conditions-based assessment or an overall assessment of our sensitive activities going forward. We can talk a little bit more about that. But we would not be able to get some of the analysis and the research done that is required otherwise without those affiliated universities.

Mr. BACON. Well, our University of Nebraska is very proud of what it does, and they want to continue supporting DOD.

While Mr. Oxford is here, I would just like feedback on some questions on Open Skies. Can you give us an update on the Open Skies mission? You know, it has been a little bit under the microscope lately, and I am a big supporter, but I would like to get your update.

Mr. OXFORD. Sure. Thanks for the question.

First of all, last fall, working with the Joint Staff-Policy and the National Security Council, there was a determination made to actually increase the strategic value of every mission that we flew. So we have actually, without going into detail, we have started flying in places within and over Russia that we hadn't before. We just completed a mission in late January that—we had never flown in January before.

So this is a matter of using the strategic nature of the treaty that may not have been used the way it should have for the last 20 years. We have another mission going on right now, so back-to-back missions. And if we fly all the missions currently planned this year, it will be the busiest Open Skies season ever.

Mr. BACON. Great to hear.

What is the value of Open Skies to our allies? Because I think that that is an area that we are missing in our discussions.

Mr. OXFORD. So, you know, when we talk about leaving Open Skies, we have a lot of consultation with our treaty partners. And they have been universal in the need for this dialogue, this ability to do that, and the ability, again, to continue to put pressure on Russia.

I was at EUCOM [United States European Command] last week. We were talking about EUCOM's European strategy for 2020. And it is clear NATO [North Atlantic Treaty Organization] was coming together, like it hasn't in many years, as a community, worried about Russian influence, and the ability to push back on Russia

has become more of a NATO issue. So these kinds of capabilities, I think, they find very valuable.

Mr. BACON. Thank you.

I yield.

Mr. LANGEVIN. Thank you, Mr. Bacon.

I believe all members have had the opportunity to go around, one round of 5-minute questioning. So, with that, if there are no additional questions, we are going to recess now and move to the closed session.

[Whereupon, at 3:41 p.m., the subcommittee proceeded in closed session.]

A P P E N D I X

FEBRUARY 11, 2020

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

FEBRUARY 11, 2020

Opening Statement
Chairman James R. Langevin
Intelligence and Emerging Threats and Capabilities Subcommittee

Reviewing Department of Defense Strategy, Policy, and Programs for Countering Weapons of Mass Destruction for Fiscal Year 2021

February 11, 2020

The subcommittee will come to order. Welcome to today's hearing on Reviewing Department of Defense Strategy, Policy, and Programs for Countering Weapons of Mass Destruction (CWMD). Before we get started, I want to introduce—and thank—the four witnesses before us for their contributions on this important issue:

- Ms. Theresa Whelan, Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security in the Office of the Under Secretary of Defense for Policy.
- The Honorable Al Shaffer, Deputy Under Secretary of Defense for Acquisition and Sustainment and the current Acting Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs.
- Vice Admiral Timothy Szymanski, the Deputy Commander of the U.S. Special Operations Command, now the Coordinating Authority for CWMD.
- And Mr. Vayl Oxford, Director of the Defense Threat Reduction Agency.

Over the past few years, both Russia and North Korea have employed chemical weapon nerve agents. In Syria, pro-regime and ISIS forces used chemical weapons on civilian populations to achieve their tactical and strategic objectives. Advances in biotechnology, synthetic biology, and gene editing are rapidly changing the playing field to allow countries and individuals acting with nefarious intent—or even just by chance—to produce biological agents in a scope and scale not yet encountered. And adversaries are working on the development of hypersonic weapons to deliver warheads faster, possibly faster than our ability to counter them. All of these advances are exacerbating the complexity of the world's WMD threats. Indeed, the current coronavirus outbreak and global panic underscores how important scientific research and preparedness across the interagency is for our national and economic security.

Our four witnesses hold positions that comprise the bulk of the Department's assigned roles and responsibilities associated with aligning CWMD policy to strategy and programs; executing those programs; delivering current and future personal protective equipment and other capabilities to our warfighters; and eliminating our remaining U.S. stockpiles of lethal chemical agents.

I am told that our witnesses have been directed by the Office of Management and Budget to not speak today to the FY21 President's Budget Request—despite

this hearing taking place after the budget was released yesterday. I am deeply disappointed by this directive, which violates longstanding precedent regarding Congressional oversight. We have much to oversee on policy, programs, and strategy, and that oversight will be limited without a full understanding of the FY21 budget request. I look forward to hearing about the Department's activities to manage and counter the threat of a drastically morphing CWMD landscape.

This year we tasked GAO to review the preparedness of U.S. forces to counter North Korean chemical and biological weapons on the Korean peninsula. GAO has already highlighted many unsettling issues. Most pressingly, we question whether U.S. Forces Korea planners have access to the relevant intelligence on North Korean chemical and biological weapons sites needed to effectively plan—and if necessary, conduct—counter-WMD operations.

I am deeply concerned that our preparedness for a significant state-level WMD event is wholly inadequate. We owe it to the men and women in uniform to ensure they are trained and equipped to successfully operate and perform in a contaminated environment.

In closing, there is much work to be done to strengthen CWMD policy, programs, and preparedness. This includes understanding the 2014 strategy in the context of today's threat landscape, the budget request's alignment to the current strategy, and how the Department's strategy and end-states are consistent with a national level strategy and whole-of-government effort.

I look forward to hearing from our witnesses and note that following this discussion, we will move to a closed, classified, session.

I'll now turn to Ranking Member Stefanik for her remarks.

VERSION: February 7, 2020, 1325

NOT FOR PUBLIC RELEASE UNTIL APPROVED BY THE
HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

MS. THERESA M. WHELAN
PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR
HOMELAND DEFENSE AND GLOBAL SECURITY
BEFORE THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON INTELLIGENCE AND
EMERGING THREATS AND CAPABILITIES
FEBRUARY 11, 2020

NOT FOR PUBLIC RELEASE UNTIL APPROVED BY THE
HOUSE ARMED SERVICES COMMITTEE

INTRODUCTION

Chairman Langevin, Ranking Member Stefanik, and members of the subcommittee, I am honored to testify today regarding the Department of Defense's (DoD) efforts related to the countering weapons of mass destruction (CWMD) Enterprise. The DoD CWMD Enterprise's mission is to dissuade, deter, and, when necessary, defeat actors of concern who threaten or use WMD against the United States and our interests. Key to ensuring mission success is the DoD CWMD Enterprise's capability and capacity to prepare for, respond to, and mitigate the effects of WMD use. Assistant Secretary of Defense for Homeland Defense and Global Security Ken Rapuano and I work alongside Deputy Under Secretary of Defense (DUSD) for Acquisition and Sustainment Alan Shaffer; Director, Defense Threat Reduction Agency Vayl Oxford; Deputy Commander of the U.S. Special Operations Command, Vice Admiral Timothy Szymanski; and other DoD, interagency, and international counterparts to advance this mission in the face of existing WMD threats and a rapidly changing threat landscape that will yield new ones.

As we look to prevent and contain WMD threats abroad, we also work consistently to ensure we can respond to crises and mitigate the effects of WMD use at home and abroad – all while continuously improving internal DoD practices and processes. The DoD CWMD mission is extensive and complex, requiring expertise from across the Department's components to ensure the effective development and implementation of guidance, analysis, capabilities, and activities. The DoD CWMD Enterprise continues to work collaboratively and with increasing efficiency to prevent WMD proliferation and acquisition, contain and reduce threats, and respond to WMD-related incidents and contingencies.

THREAT ENVIRONMENT

The Department's CWMD Enterprise is postured to address current and evolving chemical, biological, radiological, and nuclear (CBRN) threats. The threats of WMD use and proliferation are rising, and all of the National Defense Strategy (NDS) "2+3" actors (China, Russia, North Korea, Iran, and Violent Extremist Organizations) have or are pursuing WMD capabilities that could threaten the United States or U.S. interests.

The DoD CWMD Enterprise is postured against a range of threat actors. The 2018 National Defense Strategy and the evolving WMD threat environment focus our attention on Russia and China. China maintains and advances a modest but growing nuclear weapons arsenal and associated delivery systems, including road-mobile and silo-based intercontinental ballistic

missiles (ICBMs), ballistic missile submarines, and medium-range ballistic missiles. China maintains a public policy of "no-first-use" of nuclear weapons, and publicly pledges never to use or threaten to use nuclear weapons against any non-nuclear-weapon State. China is a State Party to both the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), and has pledged to meet its commitments under these arms control treaties. At the same time, WMD material continues to be proliferated from China to North Korea, Iran, and other actors of concern – not necessarily with the Chinese Government's direction, but without the Government's sustained focus to stop it. We continue to assess how to counter WMD proliferation threats from China. Additionally, given China's military-civil fusion, the U.S. Government continues to be concerned about China leveraging U.S. and other international components to advance its nuclear and other strategic military programs.

Russia has prioritized investments in its nuclear weapons arsenal and a diverse set of associated delivery systems. Russia has committed $28 billion and is now nearing completion of the modernization of its nuclear triad. President Vladimir Putin announced in 2018 that Russia is developing several destabilizing new strategic nuclear weapons that are designed to evade and counter traditional missile defenses. These include a nuclear powered cruise missile, an autonomous underwater vehicle, and a recently fielded hypersonic glide vehicle. In addition to investing in strategic nuclear weapons, Russia is increasing its already large arsenal of non-strategic or 'tactical' nuclear weapons, which Russia will use to compensate against NATO's conventional military superiority. This necessitates increased attention on how the Joint Force could fight and win in a nuclear contaminated environment. Additionally, Russia's use of a chemical weapon in Salisbury, UK, to poison the Skripal family shows that Russia has maintained an undeclared chemical weapons program and has not met its obligations under the CWC. We have serious concerns about Russia's chemical weapons program and the threat it poses to U.S. and Allied forces.

We assess that North Korea is the country most likely to pose a WMD threat to our Joint Force and, thus, North Korea dictates a significant amount of our attention and efforts. Despite the U.S. Government's tireless efforts to reach a negotiated denuclearization arrangement with North Korea, Kim Jong Un's regime continues to pursue WMD capabilities, putting the United States and our allies and partners at risk. North Korea's continued actions in this regard, which violate multiple United Nations Security Council resolutions (UNSCRs), undermine the existing

nonproliferation regime and threaten international stability. The Department works with international partners to implement obligations under relevant UNSCRs and to contain North Korea's WMD ambitions. The Department remains postured to respond to North Korean WMD and missile attacks and works with allies and partners to ensure they are similarly prepared to mitigate North Korean CBRN threats.

We continue to watch Iranian actions to breach limits on Iran's nuclear program. Iran said in January 2020 that its uranium enrichment program is now operating without constraints, though there are no indications at present that Iran has made the strategic decision to pursue a nuclear weapon. Significantly, Iran continues to permit access to International Atomic Energy Agency inspectors, in accordance with its international nuclear commitments. DoD will continue to work in support of the President's direction to ensure that Iran does not acquire a nuclear weapon, and will continue to monitor any other Iranian WMD activities, to include potential efforts to develop central nervous system-acting chemicals for offensive purposes.

Violent Extremist Organizations (VEOs) maintain varying levels of interest in acquiring and using WMD. ISIS's use of chemical weapons in Iraq and Syria makes clear the threat posed by VEOs gaining access to materials, knowledge, skills, and the safe harbor necessary to develop and use WMD. The availability of materials, knowledge, and skills necessary to create, at a minimum, crude biological, chemical, radiological, and nuclear WMD continues to be a significant risk that the United States and its allies and partners work to mitigate.

The WMD threat landscape is changing continuously. Today's threats will not necessarily be linear in leading to tomorrow's concerns. This is evident in the risks posed by rapid advances in biotechnologies, such as genome editing, genetic sequencing, and engineered biology, which increase the potential, variety, and ease of access to biological weapons. The Department is closely tracking these developments, as well as converging enabling technologies such as artificial intelligence and high-performance computing. The DoD CWMD Enterprise works simultaneously to mitigate these potential threats while ensuring that the United States is also postured to realize the benefits offered by these emerging technologies.

Meanwhile, certain countries, such as Russia and Syria, are not living up to their treaty obligations and thereby are threatening the rules-based international order that the United States and our allies and partners helped to establish to increase stability and security by deterring

actors from developing and using WMD. The Syrian regime has used chemical weapons against the Syrian people in attacks that have killed or injured thousands.

OSD POLICY'S ROLE IN THE CWMD MISSION

The Under Secretary of Defense for Policy (USD(P)) is the principal staff assistant (PSA) to the Secretary of Defense and the Deputy Secretary of Defense for developing, coordinating, and overseeing the implementation of DoD strategy and policies for CWMD, in line with DoD and national strategies. In practice, OUSD(P) develops and guides CWMD strategies and policies, and leads related interagency and international engagements. My team and I work closely with our colleagues across the Department — including from the Offices of the Under Secretaries of Defense for Research and Engineering (R&E), for Acquisition and Sustainment (A&S), for Personnel and Readiness (P&R), and for Intelligence and Security, and the Joint Staff and the Combatant Commands — to develop and implement cohesive policies in support of the Secretary's priorities and the National Defense Strategy.

The Department's efforts to address WMD threats span the CWMD mission spectrum: from preventing new actors' acquisition of WMD, to containing existing threats, to responding to CBRN incidents. The variety of offices in the Department that focus on CWMD, as enumerated in DoD's Report on CWMD, submitted in compliance with Section 1082 of the John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Public Law 115-232), offer unique expertise in ensuring our forces are prepared to respond to and operate in a CBRN-contaminated environment to ensure resilience and survivability, while also working to avoid such a necessity by preventing WMD threats from emerging or escalating.

The DoD CWMD-Unity of Effort (UoE) Council, which recently completed its first official year in operation, is a key cross-cutting venue for identifying gaps in our approach and bringing together all stakeholders to drive towards solutions. With Assistant Secretary Rapuano and Lt Gen David W. Allvin (Director for Strategy, Plans, and Policy, Joint Staff) as co-chairs, and DUSD Shaffer, as the Vice Chair, in his role as Performing the Duties of Assistant Secretary of Defense (ASD) for Nuclear, Chemical, and Biological Defense Programs (NCB), the Council is increasing members' and staff awareness of ongoing DoD CWMD activities, sharing concerns, and reducing overlaps in how the Department's CWMD Enterprise operates. By creating a venue for us to meet regularly and hold frank discussions concerning Department-wide CWMD-related gaps and opportunities, the CWMD-UoE Council is helping build a more sustainable and

resilient force, and is working towards providing a type of "consolidated buying power" to address gaps as they are identified.

Over the last year, the CWMD-UoE Council focused on four primary agenda items — two related to the potential use of pharmaceutical-based agents (PBAs) as a chemical weapon; one related to Joint Force readiness for a North Korea contingency; and one related to Enterprise-wide WMD prioritization — while continuing to advance issues raised previously by stakeholders toward resolution. Previously raised issues include ensuring adequate operational guidance for exposure to chemical and biological weapons in a contingency, DoD policy and capability to address contaminated human remains, and preparing for noncombatant evacuation operations in a CBRN-contaminated environment.

With the increasing concern and questions about the potential use of PBAs as chemical weapons, the CWMD-UoE Council assessed the implications of, and appropriate scenarios for, using DoD CWMD authorities to counter the PBA threat. The CWMD-UoE Council also worked with the Joint Staff Directorate for Force Structure, Resources, and Assessment (J8) to initiate a capabilities-based assessment that will evaluate whether U.S. forces have gaps in operating within a PBA-contaminated environment. The CWMD-UoE Council will be available to support J8-led efforts to address gaps that the study identifies.

Addressing shortfalls related to a potential North Korea contingency is a CWMD-UoE Council priority. After the Korea Readiness Review and the assessment of U.S. Forces Korea CBRN materiel shortfalls per Senate Report 115-262, which accompanied Section 2987 of the NDAA for FY 2019, the DoD CWMD Enterprise harnessed the CWMD-UoE Council to help close the gaps. The CWMD-UoE Council Capabilities Subcommittee has worked to ensure that there are leads for each outstanding item, and is now monitoring progress toward ensuring the gaps are closed in a timely manner so our forces will be ready to operate and win in a contaminated environment, if necessary. At our next CWMD-UoE Council Executive Committee meeting, the DoD CWMD Enterprise will collectively discuss how to address eliminating any remaining gaps to ensure U.S. forces are resilient in the face of WMD threats on the Korean Peninsula.

In the United States, DoD supports its Federal- and State- partners' preparedness efforts to respond to CBRN incidents in the homeland, such as integrated regional planning, training, and exercises in coordination with Department of Homeland Security, the Federal Emergency

Management Agency, the Department of Health and Human Services (HHS), the Federal Bureau of Investigation (FBI), and other Federal partners. DoD assists civil authorities' efforts to detect, identify, neutralize, dismantle, and dispose of CBRN threats before they reach our nation's borders and if they succeed in penetrating our borders, DoD leverages these capabilities to prevent employment against our nation and its population. DoD has developed a wide range of CBRN-response capabilities and continuously plans, trains and exercises so that DoD is prepared to employ these capabilities rapidly in support to civil authorities to help save and sustain lives in the aftermath of a CBRN incident.

The DoD CBRN Response Enterprise (CRE), approximately 18,735 Active, Guard, and Reserve military personnel, is postured to respond within hours of a CBRN incident. The CRE brings critical capabilities such as detection and assessment of CBRN hazards; casualty search and extraction; casualty decontamination; emergency medical, patient triage, trauma care, and surgical and intensive medical care; fatality recovery; ground and rotary-wing air patient movement; security; command and control; engineering; logistics; transportation; and aviation lift.

DoD is currently conducting an analysis of CRE mission requirements to align capabilities to the 2018 National Defense Strategy (NDS).

PRIORITIZATION EFFORTS

The CWMD-UoE Council is also focused on enabling the Department's CWMD Enterprise to work more collaboratively and to guarantee the best return on DoD investment through an OUSD(P)-led prioritization effort. The CWMD Policy Office, with assistance and contributions from the other DoD stakeholders, is leading an effort to prioritize WMD threats and provide related policy guidance for the Department to organize DoD CWMD operations, activities, and investments (OAIs) around a cohesive threat picture. This prioritized list of threats will reflect traditional intelligence-related factors, such as capability and intent, as well as policy factors related to DoD CWMD missions, capabilities, and authorities. The prioritization effort also take into account the guidance provided by the 2017 National Security Strategy (NSS) and 2018 NDS. The resulting policy guidance will inform and, where appropriate, drive decision-making on CWMD-related OAIs.

Ultimately this prioritization process is not intended to replace prioritization processes already employed by various DoD CWMD Enterprise stakeholders that are conducted through

the lens of their unique authorities and missions, but will be designed to complement those efforts. For example, OUSD(P) sets the strategic priorities for DoD's Cooperative Threat Reduction (CTR) Program and over the last year instituted a new approach to ensure alignment with the WMD threat reduction objectives articulated in the National Security Strategy and National Defense Strategy. Moving forward, we will incorporate the Unity of Effort Council WMD prioritization work and strategic guidance into our CTR prioritization methodology. The DoD CTR prioritization effort will evolve further to reflect the CWMD-UoE Council's forthcoming DoD-wide WMD prioritization guidance.

OUSD(P)/CWMD ROLE IN NDS EXECUTION

The DoD CWMD Enterprise plays a critical role in achieving NDS objectives. The NDS "2+3" actors pose great concerns because of their development or possession of WMD programs. The DoD CWMD Enterprise has several distinct responsibilities: prevent WMD proliferation and acquisition, contain current WMD programs, and ensure U.S. forces can fight and win in a contaminated environment as well as help manage the consequences of a WMD crisis. Through these responsibilities, we are continuing to advance the three NDS lines of effort: (1) restore readiness through lethality; (2) business reform; and (3) strengthen alliances and building partnerships.

Restore Readiness through Lethality

The DoD CWMD Enterprise, using OUSD(P) guidance, works to prevent WMD threats from emerging and to contain existing threats so an actor that poses an otherwise manageable challenge is unable to become a strategic threat through the development or acquisition of WMD. For example, the Department supports interagency-led efforts by remaining prepared to interdict WMD and delivery-system related materials going to threat actors that cannot be stopped through other means. OUSD(P) also works to bolster the strength of the international nuclear nonproliferation system by lending expertise to the Department of State-spurred Creating an Environment for Nuclear Disarmament (CEND) initiative that is bringing key countries worldwide together to advance the disarmament objectives under the Nuclear Nonproliferation Treaty (NPT). Additionally, the DoD's CTR Program has contributed to force readiness and lethality by responding to and preventing outbreaks of disease that could affect DoD or allied personnel, whether or not such diseases are caused by biological weapons. For example, during the 2014 Ebola outbreak, DoD's CTR Program-provided training and capabilities contributed to

West African nations' ability to stop the spread of the disease. Similarly, in 2019, Uganda leveraged capabilities previously provided by CTR to help stop Ebola's spread from neighboring DRC. Both examples demonstrate DoD's unique authorities and capabilities through the CTR Program to halt outbreaks of diseases of security concern and keep the force mission-capable.

Containing existing threats also bounds the WMD problem set from advancing past a point where our forces would be unable to compete, as does preparing forces to respond to CBRN crises. The readiness of U.S. forces to operate and prevail in a CBRN environment will deny adversaries any benefits from attempts to degrade our effectiveness in a conflict. In late 2019, DoD and the Republic of Korea Ministry of Defense (ROK MoD) signed a Joint Statement outlining one another's commitment to reduce the threats posed by WMD, and to utilize the DoD CTR Program's authorities and resources to work towards common objectives. Additionally, through U.S. DoD-ROK MoD engagements we will continue to reduce the risk posed by CBRN employment. As a direct result of these engagements, ROK restructured their Nuclear Characterization Team construct and sent over two dozen ROK military members to four weeks of individual and unit level skills training, ensuring the availability of a professional cadre of military service members.

The CWMD Policy Office is also working to limit North Korea's ability to advance its WMD and missile programs via U.S. Indo-Pacific Command (USINDOPACOM), by coordinating with partners through a United Nations Security Council Resolution (UNSCR) Enforcement Coordination Cell. This Cell is charged with documenting and disrupting illicit ship-to-ship transfers of refined petroleum, as the refined petroleum is available to support and advance its WMD and missile programs. Australia, Canada, France, Japan, New Zealand, the Republic of Korea, and the United Kingdom have all contributed personnel or operational assets to support diplomatic and intelligence-led efforts to disrupt networks and, where possible, prevent transfers from occurring.

Business Reform

As I mentioned earlier, we are focusing the DoD CWMD Enterprise on core mission functions to achieve peak return on investment. The ongoing CWMD-UoE Council efforts to align officials to support high-priority requirements, prioritize OAIs, and remove any overlaps to contribute to a high-functioning community of effective stakeholders. For example, DoD is refocusing efforts to integrate early coordination with host nations to help plan for their

sustainment of DoD's CTR Program training and capabilities. Such forward planning contributes to lasting and meaningful threat reduction contributions to the CWMD mission at-large, while helping the Department be good stewards of taxpayer resources.

Strengthening Alliances and Building Partnerships

Finally, the DoD CWMD Enterprise's work contributes to strong alliances and partnerships, which in turn enables burden-sharing. We work with capable allies and partners to increase and sustain common ground and collective resolve in the face of WMD adversaries, and to uphold international norms, treaty commitments, and counterproliferation efforts. The Department has affirmed its support of the Proliferation Security Initiative (PSI) by hosting, co-hosting, and participating in eight bilateral and multilateral events in FY 2019, with an additional eight scheduled for FY 2020, to include the U.S.-hosted Fortune Guard 20, which will kick off a new round of the PSI Asia-Pacific Exercise Rotation.

The Department is taking full advantage of its authority under Title 10, U.S. Code, Section 333, to build partner nation CWMD preparedness and incident response capability in countries such as: North Macedonia, Moldova, Armenia, Georgia, Kenya, Senegal, Morocco, Philippines, Thailand, Lebanon, and Oman. In so doing, we are working to ensure that our partner nations have a CWMD response capability that is interoperable with U.S. CBRN forces, once deployed in times of crisis.

We also work regularly to expand CWMD partnerships with key allies, though I will save the examples for the classified session.

Conclusion

Looking ahead, the DoD CWMD Enterprise's agility and expertise will enable us to address the existing and emerging WMD threats of 2020 and beyond. While containing the WMD threats posed by our greatest adversaries and preventing manageable concerns from posing strategic WMD threats, we will continue to improve upon the Department's ability to address WMD threats and operate and win in a contaminated CBRN environment. The prioritization efforts led by my team will further ensure that the DoD CWMD Enterprise is focused on areas where the Department has a core role, and will help to reach peak return on our investments. Thank you for your continued commitment to and support of the CWMD mission.

Theresa Whelan
Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security

Ms. Theresa Whelan assumed the duties as the Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security (HD&GS) as of July 10, 2017. She is a career member of the Senior Executive Service, and prior to coming to HD&GS, from January 20, 2017, until June 5, 2017, Ms. Whelan Performed the Duties of the Under Secretary of Defense for Policy. In this capacity she advised the Secretary of Defense on all matters pertaining to the development and execution of U.S. national defense policy and strategy. Ms. Whelan brings over thirty years of experience in the defense intelligence, defense policy and national intelligence communities.

From March 2016 through January 2017, Ms. Whelan served as the Acting Assistant Secretary of Defense for Special Operations and Low Intensity Conflict.

From July 2015 through March 2016, Ms. Whelan served as Principal Deputy Assistant Secretary of Defense for Special Operations/Low Intensity Conflict.

Before returning to the Department of Defense, Ms. Whelan served as the national intelligence officer for Africa on the Director for National Intelligence's National Intelligence Council. Between 2003-2011, she held three separate deputy assistant secretary of defense (DASD) positions within the Office of the Under Secretary of Defense for Policy: DASD, Homeland Defense Domains and Defense Support to Civil Authorities; DASD, Defense Continuity and Crisis Management; and DASD, African Affairs.

In addition to the deputy assistant secretary positions, her other assignments in the Department include Under Secretary of Defense for Policy's Balkans Task Force, Senior Program Director for the US/South Africa Joint Defense Committee, Countries Director for Southern Africa and West Africa, and African military capabilities analyst for the Defense Intelligence Agency covering West, Central and East African countries.

Ms. Whelan has a Master of Arts in national security studies from Georgetown University, a Master of Science in national security strategy from the National War College, and a Bachelor of Arts in international relations with a minor in Russian studies from the College of William and Mary.

Her awards include three Presidential Rank Executive Awards, two at the Distinguished level and one at the Meritorious level; two Department of Defense Medals for Distinguished Civilian Service; the National Intelligence Superior Service Medal; the American University Roger W. Jones Award for Executive Leadership; the Paul H. Nitze Award for Excellence in International Security Affairs, and the French National Order of Merit.

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House Armed Services Committee

Statement of

Alan R. Shaffer

Deputy Under Secretary of Defense

For Acquisition and Sustainment

And

Performing the Duties of

Assistant Secretary of Defense for

Nuclear, Chemical, and Biological Defense
Programs

Before the

U.S. House of Representatives Committee on Armed Services
Intelligence and Emerging Threats and Capabilities Subcommittee

February 11, 2020

Not for Public Release until Approved by the
House Armed Services Committee

INTRODUCTION

Chairman Langevin, Ranking Member Stefanik, and distinguished members of the Subcommittee, I am honored by your invitation to represent the men and women of the Department of Defense (DoD) who work to reduce the threats to our forces and populace posed by weapons of mass destruction (WMD) and to testify on their efforts to counter these threats.

Three offices subordinate to the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (NCB) are responsible for ensuring DoD maintains the readiness and resilience to counter WMD. The Office of Nuclear Matters (NM) advises the Under Secretary of Defense for Acquisition and Sustainment and the Secretary of Defense on nuclear weapons and forensics as well as defense-related aspects of nuclear energy. The Office of Chemical and Biological Defense (CBD) oversees the research, developments, and acquisition of all of the equipment necessary to protect our warfighters from chemical and biological weapons. The Office of Threat Reduction and Arms Control (TRAC) ensures effective implementation of the U.S. Chemical Weapons Demilitarization and Cooperative Threat Reduction Programs, U.S. compliance with certain arms control treaties, and readiness for a variety of countering WMD missions. And, although a separate Defense Agency, the Defense Threat Reduction Agency (DTRA) works with and through my office to ensure DoD's investments align with the National Defense Strategy's three lines of effort to increase lethality, strengthen alliances, and execute business reform, as well as the DoD's Countering Weapons of Mass Destruction (CWMD) strategy to prevent WMD acquisition, contain and reduce threats, and respond to crises. I am responsible for enabling and synthesizing the work of these offices and serving as a DoD representative, advisor, and technical expert in interagency and international CWMD engagements to ensure activities are aligned across the U.S. Government and beneficial to the United States and its allies and partners.

THREAT ENVIRONMENT

The globalization, permutation, and accelerated development of science and technology underpinning WMD represent new challenges and hazards in our changing environment. Russia and China are modernizing and expanding their nuclear forces, and rogue regimes such as North Korea threatens the world through its pursuit of weapons of mass destruction and long-range missile capabilities. Iran is a destabilizing regional presence through its pursuit of nuclear capabilities and sponsorship of terrorism. Others are actively researching novel forms of chemicals that have been or could be weaponized as well as advances in biology and genetic engineering. A handful of countries have recently used chemical weapons against their adversaries or citizens. The attempted assassination of Sergei and Yulia Skripal with a Novichok agent in Salisbury, UK, and the assassination of Kim Jong Nam with VX, remind us that the nature of these threats is both changing and growing. Non- State actors have developed and used crude chemical weapons and continue to refine their recipes, means of delivery, and tactics. These truths suggest a persistent and growing mindset that access to WMD provides tactical, operational, and strategic advantages.

In addition to a return to great power competition, we are also faced with non-traditional, asymmetric, and sophisticated threats. Anticipating and overcoming these

increasingly complex threats require renewed focus, innovative thinking, and clear priorities. I have directed the offices responsible for modernization of our nuclear warheads and delivery systems, chemical and biological defense, and threat reduction and arms control to increase focus on these new threats.

We must also change how we think about strategic deterrence. In addition to modernizing our nuclear deterrent and defensive capabilities, we must more effectively leverage all the instruments of national power to deter State and non-State actors from pursuing or developing chemical, biological, radiological, and nuclear capabilities. The United States must engage the global community to improve WMD deterrence. Failure to do so risks accepting an environment in which WMD use is broadly viewed as an acceptable form of warfare.

IMPLEMENTATION OF THE NATIONAL DEFENSE STRATEGY

The National Defense Strategy outlines three key lines of effort, namely enhancing lethality, strengthening alliances and partnerships, and reforming business practices. The Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (OASD(NCB)) as part of the DoD CWMD Enterprise is fully committed to executing initiatives in each of the three lines of effort outlined in the Strategy, with a focus on the priority defense objective to dissuade, prevent, and deter State and non-State adversaries from acquiring, proliferating, or using WMD. The modernization of our nuclear deterrent to ensure we maintain a capability that is flexible, adaptive, and credible is the single most important element in deterring our adversaries and reassuring our allies and partners. It serves as a foundational capability that enables all other efforts, including CWMD activities.

We are working to counter the proliferation and use of WMD through investing in capabilities to detect and attribute the proliferation or use of nuclear weapons, by modernizing our capabilities to address the threats posed by fourth-generation agents such as Novichoks, pharmaceutical-based agents like fentanyls, and new biological threats resulting from the ongoing revolution in biotechnology. These initiatives serve to enhance our operational capabilities by providing the President and his national security team with options and providing warfighters with the tools they need to counter the use of WMDs and to remain effective on the battlefield. We are also implementing innovative business practices to accelerate destruction of the U.S. chemical weapons stockpile. The sooner we complete destruction, the sooner we can divert these fiscal resources to further enhancing lethality; complete destruction will also strengthen our alliances and partnerships by demonstrating commitment to our treaty obligations.

ENHANCING LETHALITY (Line of Effort 1)

WMD are considered a separate class of weapons because of their especially destructive power and ability to overwhelm the adversary's ability to respond. If the UK's experience in Salisbury shows us anything, it's that a few grams of Novichok intended for a singular human target can sow terror, cause collateral illness and death, and result in remediation activities costing millions of dollars. And, although breakthroughs in previously disparate branches of science and technology – including chemistry and biology, artificial intelligence, computer science, and nano-

engineering – enable the development of new countermeasures, they also present new threats by enabling the development of new weapons. We must ensure the effectiveness and credibility of our own nuclear forces through our nuclear modernization and sustainment programs and counter adversary WMD capabilities through research, detection, improved defenses, and mitigation measures.

The mix of science-based threats – ranging from chemical, biological, and nuclear to space and cyber – necessitates a flexible, adaptable, and resilient defense. Our approach to addressing this threat space is multidimensional. We are leveraging and improving our deterrence, as well as offensive, protective, response mitigation, and predictive capabilities. We are committed to ensuring our nuclear deterrent is safe, secure, effective, and survivable. And we are working to ensure our Warfighters are prepared to counter WMD threats, and we are improving resilience and defensive capability so our forces can fight and win in any environment.

Ensuring a safe, reliable, and effective nuclear deterrent

Consistent with the National Defense Strategy, modernization of our nuclear force continues to be the DoD's highest priority. The modernization of our existing nuclear force, which predates the dramatic deterioration of our strategic environment, and the expansion of nuclear options now, to include low-yield options, is important for the preservation of credible deterrence against regional aggression. The modernization of our aging nuclear force, designed to meet the demands of our U.S. strategy, has necessitated increased investment in DoD and the National Nuclear Security Administration (NNSA) nuclear programs. We must continue these if we are to maintain a flexible, resilient, and credible deterrent. A strong nuclear posture is critical to preventing the use and proliferation of WMD. Our nuclear deterrent underwrites every U.S. military operation around the world and is the foundation and backstop of our national defense. Our extended nuclear deterrent commitments to allies and partners in Europe and the Asia-Pacific region reaffirm our mutual interests and shared views on regional threats. More so, our extended deterrence commitments have reduced the proliferation of nuclear weapons by minimizing the incentives for allies and partners to develop their own. Effective deterrence is the foundation for effective assurance, and our allies and partners under the U.S. nuclear umbrella, as well as our adversaries must not doubt our extended deterrence commitments, nor our ability and willingness to fulfill them. Further, our nuclear deterrent facilitates our diplomatic efforts and helps ensure conflicts with potential adversaries do not escalate to large-scale war.

Nuclear Physical Security

Critically important to nuclear weapons is the ability to secure them. The Office of Nuclear Matters' Physical Security Enterprise and Analysis Group (PSEAG) is charged with ensuring the safety and security of U.S. nuclear weapons. The Nuclear Matters team is currently updating physical security guidance for the protection of nuclear weapons and nuclear command and control facilities, as well as special nuclear material under DoD control. To gain insight into the effectiveness of our policies and capabilities for protecting our nuclear weapons, the team also oversees the DoD Force-on-Force Program, which evaluates the effectiveness of nuclear security policy through testing, evaluation, and analysis of DoD nuclear security system environments and associated security forces. These efforts identify gaps in DoD and Military Department/Service nuclear security policy, test potential security capability enhancements, and inform risk-based

decisions affecting nuclear security policy across DoD. This exercise program accounts for foreign and domestic threats, including those posed by emerging and rapidly evolving technologies, such as unmanned systems. We are preparing for a Force-on-Force Exercise in August 2021 that will evaluate the effectiveness of nuclear security policy for Nuclear Command and Control Platforms. We regularly exercise Nuclear Weapons Accident and Incident response, and will do so again this year. This event will exercise response to the effects of an earthquake and aftershocks that cause a nuclear weapons accident and concerns over continuity of power to a naval nuclear reactor. These events will evaluate contamination effects and test the effectiveness of DoD and interagency response forces and consequence management plans.

To maintain the effectiveness of our nuclear weapons security systems and broader force protection efforts against traditional and emerging threats, the aforementioned PSEAG identifies and addresses materiel and analytical physical security needs identified by DoD Components. We use the PSEAG to address gaps in our ability to detect, delay, deny, defeat, and ultimately deter threats to our nuclear and non-nuclear assets, both at home and abroad. Through collaboration across DoD and with other U.S. Government departments and agencies, the PSEAG identifies capability gaps and proposed solutions while avoiding duplicative efforts. The PSEAG continually looks forward to address emerging threats, including countering unmanned systems. One example of the projects we manage is the joint DoD and NNSA Portable Intrusion Detection System (PIDS) that addresses similar needs to protect nuclear weapons and special nuclear material. PIDS will be a temporary system that can be deployed, set up, configured, and operational within a short time frame. The system will detect intrusions at the perimeter, provide location data (e.g., sector or zone) of intrusions along the perimeter, initiate the alarms and announce the location to security forces, and provide a means of assessing the alarms. PIDS is scalable for varying perimeter sizes, environments, and locations, and will be capable of rapid deployment to locations that require temporary perimeter detection. Another project is the Platform for Integrated Command, Control, Communications, and Responsive Defense (PICARD), which will leverage a secure cloud and open platform to create an architecture for future physical security systems. This project is designed to eliminate stovepiping of information and replace expensive legacy platforms that lack the infrastructure to turn the data into actionable information. PICARD will create an open platform for aggregating, analyzing, and effectively distributing data through a user-defined common operating picture.

Finally, I would be remiss if I failed to mention a growing threat to the WMD mission space. As our society's dependence on digital networks continues to grow, cybersecurity challenges highlight vulnerabilities we cannot afford to ignore. To be clear, I am not talking about "cyber" as a WMD, as we limit the terminology of WMD to CBRN weapons. However, cyber activities against U.S. ports, power grids, and similar targets have the potential to disrupt the nuclear deterrent as well as common methods of protection. The Nuclear Matters team is working to ensure physical security policy is aligned with cyber security policy and analyzing physical security equipment to determine whether there are vulnerabilities as a result of cyberattacks.

Countering Nuclear Threats and National Technical Nuclear Forensics

The U.S. ability to provide rapid attribution after the use of a nuclear or radiological weapon is underpinned by our technical nuclear forensics capability. Timely and accurate attribution of these events to their originator or originators contributes to strategic deterrence

against asymmetric or other non-traditional delivery of such weapons against the United States and our allies and partners. Further, these technical capabilities support our ability to detect the proliferation of nuclear weapons, which helps deter parties from attempting to acquire them.

DoD is the government-wide lead for post-detonation concepts of operation, capability development (including special collection and analysis capabilities), research and development, exercises, and support to all National Technical Nuclear Forensics (NTNF) scenarios both inside and outside the continental United States. Sustaining and improving DoD and broader U.S. technical nuclear forensics capabilities is paramount to ensuring we can provide timely and high- quality technical conclusions to national decision makers. In 2019, an assessment of DoD capabilities for NTNF was completed showing that DoD capabilities are lacking in several NTNF areas, and this was included as part of a larger interagency annual report to Congress. Ensuring DoD and all of our interagency partners are aligned and properly resourced for this mission is critical. As I have moved into performing the duties of the Assistant Secretary, the NTNF role looks to me like it needs attention, and I intend to address this issue as I serve in this role.

Disrupting Proliferation Networks and Defeating Weapons of Mass Destruction

The National Defense Strategy states an objective of "dissuading, preventing, or deterring state adversaries and non-state actors from acquiring, proliferating, or using weapons of mass destruction." The Threat Reduction and Arms Control office, through the Countering WMD Systems Program, directly supports this objective. It enhances warfighter lethality by developing and fielding capabilities to analyze, exploit, and disrupt critical nodes of WMD programs and proliferation networks as well as developing capabilities to detect, disable, or defeat WMD and delivery systems.

The CWMD Systems program focuses on prototype transition into fielded capabilities, or upgrades to existing capabilities and systems, in response to warfighter needs. This program is aligned with advanced technology development at DTRA, the Department of Energy national laboratories, and other organizations, leveraging their Research, Development, Test and Evaluation (RDT&E) investments to accelerate delivery of new or enhanced countering-WMD capabilities. The CWMD Systems program enables the Joint Force to reduce WMD threats and create options for the United States to prevent WMD use. Specific examples include enabling Special Operations Forces (SOF) and Explosive Ordnance Disposal (EOD) forces to counter WMD threats and enhancing the Air Force Technical Applications Center's (AFTAC) ability to monitor nuclear treaty compliance and detect nuclear events.

Expanding Resiliency and Strengthening Defenses of Our Forces Facing Chemical and Biological Threats

DoD's CBRN defense capabilities are a key component of an integrated national effort to counter WMD and address traditional and emerging CBRN threats. The traditional mission of the Chemical and Biological Defense Program remains unchanged; we must provide our warfighters with capabilities to fight through and win in chemical-biological-contested environments. The rapidly changing and emerging chemical and biological threat landscape mandates adjustments to mission execution. We must think creatively, develop new strategies and methodologies, and ultimately shift our priorities to address the emergence of new and complex threats. We must transform our enterprise and how we conduct business to ensure our Joint Force can remain lethal

when it encounters a CBRN threat.

This Committee's assessment when the Chemical and Biological Defense Program (CBDP) was statutorily established in 1993 was particularly prescient, when it stated the "chemical and biological threat has increased in terms of widespread proliferation, technology diversity, and probability of use." Unfortunately, the chemical and biological threats we face today are evolving at an accelerating rate. The acceleration and convergence of science and technology advances, resulting in the emergence of new agents and threats, are making this mission ever more dynamic, complex and challenging.

The proliferation of scientific knowledge highlights the dual-use dilemma we now face. Scientists around the world are making extraordinary advances in chemistry, biology, and medicine, all of which advance the human condition. Advanced machine learning algorithms further enable these advances as data repositories and online journals can be mined, giving rise to new insights into and opportunities to combat diseases that plague the human race. Yet, these developments also provide insight into human vulnerabilities, including at the genetic level. Compounding the opportunities, and the threat, are advances in technologies such as CRISPR-Cas9, which is used for genetic engineering. In 2019, a Chinese scientist claimed that he used CRISPR gene-editing technology to alter the genetic code of two human babies to make them immune to HIV. A Russian scientist is reportedly planning similar work, and now there are reports the CRISPR technology has advanced from single gene replacement to multiple gene replacement at the same time. Altering the human genome presents profound opportunities to cure disease and improve the human condition, yet it also presents frightening opportunities for malicious use. The overwhelming majority of research and development work going on around the world is for the benefit of mankind, but it is easy to see how these technologies could be redirected for malign means. Science is revealing the means to weaponize biology and chemistry in ways that were purely theoretical only 10 years ago. As we continue to move forward, it's becoming increasingly apparent that creativity is our limit, not science.

The emerging threat landscape extends to new and novel chemicals as well. New compounds developed to treat illness and pain can also be used for nefarious purposes. The results of Russian security forces' use of pharmaceutical-based agents (PBAs) in the 2002 Dubrovka Theater operation show just how potent these agents are. These are the new types of threats the CBDP must take "off the table" in a systematic and targeted manner.

The evolving strategic environment demonstrates an expanding range of possible challenges and emerging threats that have the potential to outstrip available resources, outperform traditional research and development processes, and outpace acquisition timelines. These issues are increasing risk not only to our military forces, but also our first responders and citizens at large. We are experiencing not an evolution of the threat, but a revolution. Without a concerted and conscious effort focused on mitigating the emerging threat, we will lose the opportunity to prevent the most harm. Our CBD program is looking at how to rebalance the portfolio to address future threats; and I have made enhancing the posture against novel agents and threats a priority. The CBD program has initiated a zero-based review to align program efforts more effectively and prioritize predictive methods needed to prevent attacks and deliver capabilities that enable the Joint Force to fight and win in any environment contaminated by chemical or biological agents. We will work with DoD and with our interagency partners to gain awareness and understanding of rapidly evolving technologies and their impacts across the chemical and biological defense

domain. Through creative solutions and dedication to increased engagement with the Military Departments and Services and the Combatant Commands, we enable and sustain a unified CBD program. We use agile processes to develop technologies to neutralize chemical and biological threats.

We are moving to get ahead of the threat by anticipating and understanding the convergence of novel science and technology advances as contextualized by feasibility and risk. As part of a layered defense, we deny the effects of WMD by developing and fielding a wide range of defensive equipment (e.g., protective suits, detectors, and medical countermeasures). We engage early and often with our Military Department and Service partners to ensure our products are responsive to operational requirements and close Joint Force gaps. Currently, we are focused on detection and identification of next-generation threat agents, improving personal and collective protection, advanced medical countermeasures, and diagnostics for clinical samples. Delivering these capabilities protects service members and improves decision making, which sustains lethality and ensures our Joint Force has the competitive advantage when operating in a CBRN-contested environment.

STRENGTHENING ALLIANCES AND PARTNERSHIPS (Line of Effort 2)

Countering WMD best succeeds as a global effort. Thus, we focus on empowering our allies and partners, and enhancing the capacity of regional and international organizations and initiatives to stop WMD threats close to the source. The United States can dramatically improve its preparedness for and response to WMD threats through effective collaboration with its interagency partners and international allies and partners. For example, the Office of Nuclear Matters provides oversight and management of nuclear threat reduction collaborations with foreign partners, primarily through Mutual Defense Agreements, to enhance our capabilities and our foreign partners' capabilities to detect, interdict, render-safe, and attribute nuclear threats. Collaborations like these yield insights derived from a variety of perspectives, opportunities to share the cost of research and development, and the chance to improve the interoperability of systems and processes.

Interagency Collaboration on Medical Countermeasures

A key to our success is integrated, strategic engagement with our interagency and international partners. We leverage the expertise and complementary missions of the Departments of Health and Human Services (HHS) and Homeland Security, as well as our global allies and partners. Internally, all of our medical countermeasures work is coordinated with the Office of the Assistant Secretary of Defense for Health Affairs. Examples of ongoing collaboration include coordination to manage stockpiles of medical countermeasures and, especially in the case of the HHS, coordinating medical countermeasures development and implementing industry incentives that maximize value while mitigating risk.

These investments and interagency engagements have led to beneficial industry engagements. For example, to support the development and manufacturing of medical countermeasures, DoD is leveraging Other Transaction Authorities provided by Congress to broaden the scope of countermeasures development. DoD is also investing in an agile manufacturing capability through the Advanced Development and Manufacturing (ADM) facility in Alachua, Florida. This facility provides the capability to develop and produce medical countermeasures rapidly on a smaller scale than needed for the public health sector. The Chemical

and Biological Defense Program has established a platform capability at the ADM to produce medical countermeasures more flexibly, rapidly, and at a lower cost. The first platform capability being worked pertains to monoclonal antibodies against botulinum toxin and plague. Our office will continue to augment this capability, which stabilizes the industrial base for medical countermeasures by allowing DoD to mitigate risks for industry early in the development process, and to have more control over the process overall.

Strengthening Our Arms Control Posture

Countries' compliance with their international obligations regarding chemical weapons reinforces the longstanding norm against the use of these heinous weapons. Our treaty commitments form the backbone of our nonproliferation posture. In this regard, accelerating destruction of the U.S. chemical weapons stockpile is critical to demonstrating our commitment to our international obligations. The Office of Threat Reduction and Arms Control is working diligently in cooperation with the Program Executive Office for Assembled Chemical Weapons Alternatives to eliminate safely the remaining stockpiles located in Colorado and Kentucky. The Department appreciates your unwavering support and efforts to ensure this program has the requisite resources to accomplish this important mission. We are confident that complete destruction of the remaining chemical weapons will occur by the congressional deadline of December 31, 2023, with safety always being the top priority.

My office maintains a strong and supportive relationship with the Organization for the Prohibition of Chemical Weapons (OPCW). To assure the OPCW that we are doing all we can to complete destruction of the U.S. stockpile, our office presents the U.S. Chemical Demilitarization briefing to the OPCW's Executive Council three times per year and annually briefs the OPCW's Conference of the States Parties. This past year, through the Cooperative Threat Reduction Program, we contributed $7.0M to assist the OPCW in building a new laboratory. We also successfully facilitated 10 inspections of DoD sites by the OPCW Technical Secretariat and hosted international dignitaries for an OPCW Executive Council visit to the Pueblo Chemical Agent-Destruction Pilot Plant in Pueblo, Colorado. This visit and our continued engagement with the OPCW further demonstrate the U.S. commitment to compliance with the Chemical Weapons Convention (CWC).

Through such engagements with interagency and international partners, and by ensuring our compliance and proper implementation of these treaties, the TRAC Office's Treaty Management team strengthens norms against use, increases our capabilities to detect non-compliance, and improves the enforceability of arms control agreements.

In response to the use of Novichok agent in Salisbury in March 2018, we worked with allies and partners to bolster support for adding Novichoks to the CWC's lists of controlled chemicals. In November 2019, the Conference of the States Parties to the CWC agreed to the addition of these agents to the Schedules, thus demonstrating the ability of the CWC to adapt and respond to new threats. We are now working closely with interagency and international partners to ensure the smooth implementation of this expansion.

DoD's Nuclear Arms Control Technology (NACT) Program, executed by DTRA with oversight from my office, advances nuclear proliferation and explosion monitoring capabilities

through advanced research and development of improved seismic, infrasound, hydro-acoustic, and radionuclide technologies. The NACT Program also delivers timely and accurate nuclear explosion monitoring data 24-hours-a-day, 7-days-a-week through the operation and maintenance of the U.S. International Monitoring System (IMS) stations. The 2018 NPR makes a clear policy commitment to maintaining the IMS and the International Data Center (IDC), which support a long-standing requirement to detect, locate, and characterize global nuclear events, as well as our commitment to nuclear nonproliferation objectives.

Collaboration with the UK on Chemical and Biological Weapons Elimination

Drawing from our experiences assisting in the elimination of declared Libyan and Syrian chemical weapons, we know it is important for DoD to maintain the material readiness to eliminate chemical and biological weapons (CBW), should DoD be called upon to do so. We have implemented a continuous process to evaluate threats, identify gaps in capability, and recommend investments in potential solutions to improve overall DoD readiness to assist in reducing the serious threat posed by existing and future variations of CBW. To achieve the necessary readiness, we must improve our operational flexibility by identifying and rapidly developing novel solutions through collaboration with industry, academia, and our international partners. We are working with several allies to ensure we are prepared to safely and efficiently destroy chemical or biological weapons, wherever and whenever they are found. The most mature of these engagements is a U.S.-UK Chemical and Biological Weapons Elimination Bilateral Group, which shares information about solutions for the full spectrum of CBW destruction activities and jointly evaluates and invests in solutions to address capability gaps.

Strengthening Alliances

Globally, WMD threats continue to evolve. Potentially vulnerable stockpiles of nuclear, chemical, and biological materials remain at risk, with trafficking networks that span the globe and an expanding set of State and non-State actors interested in acquiring, developing, or using WMD. To address these challenges, DTRA implements a number of WMD Threat Reduction activities, including the Cooperative Threat Reduction (CTR) Program; the Chemical, Biological, Radiological, and Nuclear (CBRN) Preparedness Program; the International Counterproliferation Program; and engagements supporting the Proliferation Security Initiative. Collectively, these programs constitute some of DoD's most effective and flexible tools for addressing WMD threats, strengthening U.S. security by stopping WMD threats closer to the source.

DoD's efforts continue to reduce the threat of WMD around the world, from detecting and preventing WMD proliferation in the Middle East and North Africa, to enhancing nuclear security and counter nuclear smuggling capabilities in Europe and Eurasia, to consolidating and securing collections of dangerous pathogens in Sub-Saharan Africa, to strengthening partners' capabilities to detect and mitigate biological threats and disease outbreaks. Recently, these efforts paid off when partners in Thailand, through capacities built via the CTR Program, successfully detected the first case of the novel coronavirus in their country. Their swift response helped mitigate the spread of the virus through Thailand and beyond.

REFORMING DoD BUSINESS PRACTICES (Line of Effort 3)

As the lead for the development of capabilities to counter WMD, our focus is on ensuring

DoD delivers CWMD capabilities that are tailored to the threat and managed efficiently, to ensure the best use of taxpayer money.

Accelerating Destruction of the U.S. Chemical Weapons Stockpile

As mentioned previously, we are diligently working to complete destruction of the remaining U.S. chemical weapons stockpile. We have effectively used a variety of Acquisition Management Tools to improve the Contractor's performance significantly over the past year. In addition, recently implemented acquisition strategies have resulted in improved program management, including proactive risk mitigation practices and expedited materiel solutions.

Destruction operations at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) in Colorado continue apace. The operators will destroy approximately 780,000 mustard agent-filled projectiles and mortars. To date, PCAPP has destroyed more than 209,000 munitions containing approximately 1,225 tons of mustard agent. The plant recently recorded its highest monthly throughput rates since the start of operations in 2016. The addition of Static Detonation Chambers (SDC) later this year will increase processing rates by destroying problematic munitions that cannot be processed in the main facility. Use of the SDCs, combined with improvements to the main facility, will increase worker safety while improving schedule performance and accelerating destruction.

I am pleased to say destruction operations began at the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) in Kentucky in June of 2019, with the startup of a SDC destroying mustard filled munitions. The SDC continues destroying munitions, although technical difficulties have resulted in lower than expected throughput. We are working to address these issues directly with the manufacturer, Dynasafe. The first munition destroyed in the main plant at Blue Grass, which began destruction operations on January 17, 2020, was a GB (Sarin)-filled projectile, the first nerve agent-filled munition to be destroyed in eleven years. The operators at BGCAPP will destroy more than 101,000 munitions containing either mustard or nerve agent. The program and plant leadership have been working closely with Kentucky's Chemical Demilitarization Citizens' Advisory Commission and the Chemical Destruction Community Advisory Board to ensure local citizens are provided regular updates on the status and safety of destruction operations.

Sponsoring University Affiliated Research Centers to Improve Capabilities

NCB sponsors the Geophysical Detection of Nuclear Proliferation (GDNP) University Affiliated Research Center (UARC) at the University of Alaska, Fairbanks. The GDNP is the Department's 14th UARC, specializing in research, operations, and STEM (science, technology, engineering, and mathematics) activities for detecting indications of nuclear proliferation through seismic, infrasound, hydro-acoustic, or radionuclide technologies. The Geophysical Detection of Nuclear Proliferation (GDNP) UARC will assist in the oversight and guidance of DoD research, development, testing, evaluation, and use of scientific and technological capabilities to be able to sense, locate, characterize, and assess more effectively the threat potential of nuclear activities worldwide. The UARC also will expedite the acquisition process for organizations to identify gaps and address those gaps quickly. Some of the specific areas the UARC is addressing for DoD involves developing infrasound propagation technologies to identify more clearly nuclear explosions, seismic data processing related to the proliferation of nuclear technology, and data

gathering in the Arctic region of large volumes of gravity-point information to support navigation and guidance correction models required for DoD systems.

Leveraging Innovative Acquisition Mechanisms

In 2018, as part of our bilateral engagement with the UK on the elimination of chemical and biological weapons, we began a first-of-a-kind industry competition designed to identify materiel solutions for the disablement and/or destruction of small quantities of weaponized and bulk CBW in austere environments. We have leveraged a flexible agreement between the U.S. DoD and UK Ministry of Defence and the UK's Defence and Security Accelerator to reach non-traditional small business and academia partners to achieve rapid results at low cost. U.S. and UK counterparts have shared the burdens of defining, shaping, and funding the competition and managing the awarded contracts. Phase I of the competition is complete, and Phase II is currently underway. This innovative approach has resulted in proofs of concept for seven new technologies and will produce demonstrable prototypes in 2021 at minimal cost to both parties.

CONCLUSION

Thank you for allowing me to describe the efforts the OASD(NCB) team is undertaking to counter the threats posed by weapons of mass destruction. Our highest priorities lie in our nuclear deterrent, preventing the proliferation of CBRN capabilities, ensuring our warfighters are postured to counter CBRN threats, and sustaining and improving our capability to support attribution of the use. We will continue to collaborate and coordinate with key DoD and interagency stakeholders, as well as our international allies and partners, to maximize our effectiveness and efficiency in confronting, deterring, and, if required, defeating those who threaten the use of WMD. Failure to do so risks the safety and security of our forces, our citizens, and our allies and partners. We must not, and will not, fail.

I cannot emphasize enough the importance of this Committee's support for sustaining and improving our capabilities in addressing these evolving threats, thereby helping to ensure the safety and security of our nation.

Alan R. Shaffer
Deputy Under Secretary of Defense, Acquisition and Sustainment

Mr. Alan R. Shaffer currently serves as the Deputy Under Secretary of Defense for Acquisition and Sustainment (A&S). Senate confirmed in January 2019, he is responsible to the Under Secretary of Defense for all matters pertaining to acquisition; contract administration; logistics and material readiness; installations and environment; operational energy; chemical, biological, and nuclear weapons; the acquisition workforce; and the defense industrial base.

From 2015 to 2018, Mr. Shaffer served as the Director, NATO Collaboration Support Office in Neuilly-sur-Seine, France. In this role, he was responsible for coordinating and synchronizing the Science and Technology (S&T) collaboration between NATO member and partner Nations, comprising a network of about 5,000 scientists.

Previous to his role at NATO, Mr. Shaffer served as the Principal Deputy Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) from 2007-2015. In this position, Mr. Shaffer was responsible for formulating, planning and reviewing the DoD Research, Development, Test, and Evaluation (RDT&E) programs, plans, strategy, priorities, and execution of the DoD RDT&E budget that totals roughly $25 billion per year. He has also served twice as the Acting Assistant Secretary of Defense for Research and Engineering from 2007-2009 and 2012-2015.

Additionally, in 2009, he was appointed as the first Director, Operational Energy, Plans and Programs (Acting). Mr. Shaffer has also served as the Executive Director for several senior DoD Task Forces, including review of all research, acquisition and test activities during the 2005 Base Realignment and Closure. In 2007, he was the Executive Director for the DoD Energy Security Task Force and, from 2007-2012, he served as the Executive Director of the Mine Resistant Ambush Protection (MRAP) Task Force, where he was responsible for oversight and fielding 27,000 MRAPs.

Before entering the federal government, Mr. Shaffer served a 24-year United States Air Force career in command, weather, intelligence and acquisition oversight with assignments in Utah, California, Ohio, Honduras, Germany, Virginia and Nebraska.

His career included deployment to Honduras in the mid-1980s and direct support of the United States Army 3rd Armored Division in Hanau, Germany. During Operation DESERT STORM, he was responsible for deployment of the 500-person theater weather force. Upon retirement from the Air Force in 2000, Mr. Shaffer was appointed to the Senior Executive Service; in 2001, he assumed the position as Director, Plans and Programs, Defense Research and Engineering.

Mr. Shaffer earned a Bachelor of Science in Mathematics from the University of Vermont in 1976, a second Bachelor of Science in Meteorology from the University of Utah, a Master of Science in Meteorology from the Naval Postgraduate School, and a Master of Science in National Resource Strategy from the Industrial College of the Armed Forces. He was awarded the Meritorious Executive Presidential Rank Award in 2004, the Department of Defense Distinguished Civilian Service Award, and the Distinguished Executive Presidential Rank Award in 2007 and 2015.

STATEMENT OF

VICE ADMIRAL TIMOTHY G. SZYMANSKI, U.S. NAVY

DEPUTY COMMANDER

UNITED STATES SPECIAL OPERATIONS COMMAND

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON INTELLIGENCE AND EMERGING THREATS AND CAPABILITIES

February 11, 2020

Chairman Langevin, Ranking Member Stefanik, and Members of the subcommittee, thank you for the opportunity to represent the U.S. Special Operations Command (USSOCOM) before you today. On behalf of General Clarke, it is my privilege to join the Honorable Mr. Al Shaffer, Ms. Theresa Whelan, and Mr. Vayl Oxford at this hearing on how we work together to address some of the most critical national security challenges facing our country. These Department leaders are important partners for USSOCOM in its role as the Department of Defense (DoD) Coordinating Authority for countering weapons of mass destruction (WMD). We applaud the leadership of the office of the Assistant Secretary of Defense for Homeland Defense and Global Security in aligning Department policy for countering WMD (CWMD) with broader national and department strategy and policy and in guiding the prioritization of the Department's efforts within those same parameters. We salute the depth and breadth of the Defense Threat Reduction Agency's (DTRA) innovative CWMD programs and activities ongoing around the globe. We greatly appreciate the leadership of the office of the Assistant Secretary for Nuclear, Chemical, and Biological Defense Programs to ensure a robust nuclear, chemical, and biological defense posture for the Joint Force. We are proud to work together with this formidable group across the Department and the interagency, and with our foreign allies and partners, to counter threats from nuclear, biological, and chemical weapons wherever they may be in the world. In my statement today I will review USSOCOM's role and approach as DoD Coordinating Authority for CWMD and provide an update on WMD threats and our work to counter them over the past year.

DoD CWMD Coordination Authority Role

Many members on this subcommittee are already familiar with Special Operations Forces' long-standing operational role in CWMD proliferation. To this role, which remains

unchanged, the Unified Command Plan added coordination of the CWMD mission across the Department. Recognizing the relevance of USSOCOM's understanding of trans-regional threat networks, the Secretary of Defense approved formal transfer of this role to USSOCOM from USSTRATCOM at the end of 2016. Since his swearing-in last April as USSOCOM Commander, General Clarke has maintained the overarching strategic course set by his predecessor for the CWMD Coordinating Authority. Working within national and Department policy guidance and through USSOCOM's CWMD Fusion Cell, based both here in the National Capital Region and at USSOCOM Headquarters in Tampa, the Coordinating Authority conducts CWMD campaign planning, assesses the Department's execution of the CWMD campaign, and makes recommendations to the Chairman of the Joint Chiefs of Staff and the Secretary of Defense. For example, we worked with the Combatant Commands, especially USCENTCOM, USEUCOM, and USINDOPACOM, to help integrate CWMD tasks and objectives from the Functional Campaign Plan for CWMD into the Global Campaign Plans for which each of the Combatant Commands is the Coordinating Authority. Along the same lines, we worked with those Combatant Commands and others to integrate CWMD tasks and objectives into scheduled exercises. We also incorporated key concepts from our 2018 Functional Campaign Plan into updates to DoD CWMD military doctrine, such as Joint Publication 3-40. By incorporating key concepts from the Functional Campaign Plan into doctrine, and key tasks and objectives into plans and exercises, the Coordinating Authority thus synchronizes the department across military time horizons of strategy, plans, current operations, and future operations, while also conducting the annual CWMD Assessment.

WMD Landscape

Since I briefed this subcommittee a year ago, the landscape of nuclear, chemical, and biological threats has changed in ways both great and small. We monitor and analyze these changes closely, with critical support from the Defense Intelligence Agency. Due to the classification level of this forum, I am limited in the amount of detail I can include in the picture we see from our Coordinating Authority vantage point, but news headlines are a good indicator of the complexity of the issues. Iran last year incrementally walked back its commitments under the Joint Comprehensive Plan of Action (JCPOA) designed to curb its nuclear program, and in January announced it would not comply with any of JCPOA's restrictions on its uranium enrichment program, although monitoring and transparency provisions remain in effect. Multiple U.S. designations in 2019 of entities associated with or supporting Iran's nuclear and missile programs highlighted continued procurement and proliferation activities, while Iran's January attack on U.S. bases in Iraq served as a sobering reminder of the Islamic Republic's extensive missile arsenal. The United States also believes Iran to be non-compliant with its obligations under the Chemical Weapons Convention (CWC). U.S. diplomatic efforts towards denuclearization of the Korean peninsula continued in 2019; however, North Korea retains nuclear weapon capabilities, as well as a likely chemical weapons program, and likely biological warfare capabilities. A U.S. designation last year of a North Korean entity for importing and exporting goods in support of the government's WMD programs indicates continued activity. Meanwhile, the February 2019 conflict between India and Pakistan underscored the international risks of continued tension between these nuclear-armed rivals. China continues to modernize and expand its nuclear arsenal and weapon delivery systems while concerns persist about its compliance with the Biological Weapons Convention. Russia also continues to modernize its

nuclear weapons program, while the U.S. continues to question Russia's compliance with the CWC. In connection with the 2018 nerve agent attack on former Russian intelligence officer Sergei Skripal in the U.K., the U.S. imposed a second round of sanctions on Russia in August 2019. Finally, terrorist groups remain interested in CBRN capability.

Interagency and International Coordination

Clearly, no one agency or even government can address any of these grave issues by itself. Nuclear, chemical, biological, and radiological weapons threats are complex trans-regional challenges that demand the application of specialized expertise and authorities from across our government as well as the unique access and placement of our foreign allies and partners. As our 2018 Functional Campaign Plan recognizes, the Department of Defense in all but the most acute crises is likely to play a supporting role to our interagency colleagues, especially at the departments of Energy, State, the Treasury, and Commerce, as well as our law enforcement entities. We coordinate, therefore, not only across the Department of Defense but also with interagency partners and with foreign allies and partners—without whom achieving U.S. objectives would be unlikely. One of the primary ways we do this is through our cycle of semi-annual CWMD Coordination Conferences. An action officer-level conference each fall identifies issues for senior leader attention which we elevate for deliberation at a Senior Leader Seminar each spring. The September 2019 CWMD Coordination Conference focused on identifying CWMD contributions to overall competition with one of the National Defense Strategy's designated priority challenge countries. More than 900 participants drawn from key U.S. government agencies and from nine foreign defense partners attended or contributed to more than three dozen information sessions or working groups. And later this month, more than 70 senior leaders from many of those same agencies and partner countries will convene for the

Senior Leader Seminar to assess the WMD-related threats and discuss operational approaches to dealing with threat actor WMD issues such as technology procurement, leveraging non-lethal tools to impact threat actor decision-making and intent to use, and denying the perception of benefit from potential use of weapons to nuclear armed states. Even as we follow up on agreed upon actions from those conferences, we are beginning to plan for this fall's action officer-level conference on CWMD contributions to competition with another National Defense Strategy-designated priority challenge country. Weaving between these two events every year is the related structure of Department of Defense CWMD Unity of Effort Council meetings, in which we are an active and supportive participant. We appreciate the Council's broad understanding of, and reach across, the Department's multi-faceted CWMD community and applaud the efforts of the Assistant Secretary of Defense for Homeland Defense and Global Security in co-leading with the Joint Staff J5 the battle rhythm that supports the decisions this group needs to make. Connecting these interrelated cycles is one of the CWMD Unity of Effort Council's subcommittees, which we co-host with the CWMD staff of both the Assistant Secretary of Defense for Homeland Defense and Global Security and of the Joint Staff J5. This subcommittee provides a steady drumbeat of bi-weekly synchronization meetings for DoD Directors and action offices, which over the past year have facilitated broader community understanding and action on a range of CWMD issues, aligned with the CWMD Unity of Effort Council's vision.

In addition to hosting or participating in these discrete events, USSOCOM as Coordinating Authority supports and collaborates with interagency partners on a range of CWMD activities aligned against top U.S. national security challenges. At the Joint Staff's invitation, we are also leading the effort, as part of the Multinational Capability Development

Campaign, to develop a CWMD Handbook for distribution to allies and foreign partners. The unclassified CWMD Handbook will draw from the 2018 Functional Campaign Plan for CWMD and the new, revised Joint Publication 3-40 and will be focused on the trans-regional nature of the WMD threat and WMD pathways. It will support users in CWMD planning, exercises, training, and capability development and will be completed in January 2021.

Globally Integrated Operational Approaches

To ensure that the DoD role in countering WMD is effective, we have developed Globally Integrated Operational Approaches for each of the Tier 1WMD threat actors of concern prioritized in the Functional Campaign Plan, which were in turn drawn from the National Defense Strategy's priority challenges. The CWMD Coordinating Authority has collaborated closely with our DoD, interagency, and international partners to develop these frameworks, which lay out lines of effort and tasks aimed at achieving specific end states for each threat actor. Integrating the objectives and tasks of the Functional Campaign Plan and the Global Campaign Plans, these approaches support Combatant Command CWMD planning and provide a structure within which to array and understand ongoing DoD, interagency, and even foreign partner operations, activities, and investments (OAI) that contribute to achievement of those end states. The frameworks also allow us to identify potentially redundant or even conflicting efforts, as well as gaps and opportunities for action. Our first framework, which was in early stages this time last year, has since yielded significant results for our partner Combatant Command in the form of a Planning Order signed out by the Chairman of the Joint Chiefs of Staff. We believe that each framework has the potential to generate fresh and productive approaches to both enduring and evolving WMD challenges across DoD and the interagency.

CWMD Common Operating Picture

Related to the development of these focused frameworks over the past year, we have also developed an accessible tool to collect and display the CWMD operations, activities, and investments (OAI) relevant to the lines of effort and end states of those frameworks. A clear visualization of OAIs enables us as the CWMD Coordinating Authority to support planning of integrated campaigns, coordinate and deconflict activities, and assess DoD-wide activities against adversaries' key WMD steps and decision points.

Over the past year, we migrated this common operating picture, which we originally built out on USSOCOM systems with technical assistance from the Defense Threat Reduction Agency, to the Joint Staff's Global Integration decision support tool—the Command and Control of the Information Environment (C2IE) data analytics platform. This migration captures several significant efficiencies for SOCOM and for the department, for example, enabling us to access, tag, and pull into our display relevant data that the Combatant Commands have already entered for other purposes. C2IE is now an authoritative repository of data across the Joint Force relevant to the CWMD mission set, enabling the tool to be a platform for not only coordination but also Artificial Intelligence and advanced analytics to increase effectiveness of our CWMD efforts.

We are working with the Joint Staff to broaden the use mandate to include Combat Support Agencies and Services and thus broaden the pool of information contributors. Fed by this greater source of data and serving a larger audience, the display will enable increased sharing and understanding of CWMD efforts across the department.

Assessments and Recommendations

The CWMD Coordinating Authority also works closely with the Joint Staff, Combatant Commands, and Services to regularly assess Force progress toward CWMD campaign

objectives, and ensure the Department's plans appropriately address changes in the WMD threat environment. The common operating picture discussed above is intended to be part of this process. This tool will allow the Coordinating Authority to assess risk across multiple AORs and inform global risk calculus for the Secretary, Chairman, and Geographic Combatant Commands to make decisions pertinent to threats or incidents related to nuclear, chemical, and biological weapon development, acquisition or use.

Assessing the Department's CWMD campaign is a core part of the Coordinating Authority's mandate. We therefore strive to improve and refine our approach and methodology and ensure that it provides timely, reliable, relevant, and actionable data to support senior Department decision making with respect to this complex mission set. Our aim is to better support senior leaders charged with leading and employing the Joint Force today, developing and preparing it for tomorrow, and helping design a Joint Force that is ready to fight and win against the WMD threats of the future.

2020 Priorities and Conclusion

Our CWMD Coordinating Authority priorities for this and the upcoming fiscal year include: continuing to support Globally Integrated Department planning, ensuring robust and actionable CWMD assessments, and making timely recommendations to inform senior leader risk calculus. In particular, we will be collaborating with Joint Staff and others to update an important DoD Concept Plan based on the outcomes of a related Globally Integrated Exercise this year. All of this will be fueled by accelerated information sharing, which we will continue to prioritize through close coordination with the intelligence community, as well as through broader data collection and other refinements to our CWMD OAI display on C2IE. Our ability to plan and execute globally integrated operations is directly tied to our commitment to education

and developing a cadre of military and civilian professionals who understand the CWMD mission space, and can think creatively about how we plan and campaign against new and evolving nuclear, chemical, biological, and radiological threats. That is why USSOCOM is also committed to ensuring the Department has a strong champion for CWMD leadership development and education programs that foster critical thinking skills and allow us to adapt quickly to changes in the character of warfare.

In closing, I would like to thank the members of this subcommittee once more for their support of this important national security mission. It is a privilege to work together with Mr. Shaffer, Ms. Whelan, and Mr. Oxford every day to keep our country safe from the threat of nuclear, chemical, and biological threats and I look forward to our continued partnership with them, with members of Congress, and with our interageney and international partners to ensure our safety now and into the future.

Vice Admiral Tim Szymanski
Deputy Commander, U.S. Special Operations Command

Vice Adm. Tim Szymanski is a native of Wilmington, Delaware. He attended the U.S. Naval Academy Preparatory School and graduated from the United States Naval Academy in 1985. He completed a Master of Joint Campaign Planning and Strategy at Joint Advanced Warfighting School.

Szymanski's previous Naval Special Warfare and operational assignments include platoon and task unit commander at SEAL Delivery Vehicle Team 2. He served as troop and squadron commander and as operations officer and deputy commanding officer at Naval Special Warfare Development Group. He commanded Special Boat Unit 26, SEAL Team 2, O6-level Joint Task Force in Afghanistan and Naval Special Warfare Group 2. He served as deputy commanding general sustainment to Special Operations Joint Task Force- Afghanistan/NATO Special Operations Component Command-Afghanistan.

Szymanski served as assistant commanding general to Joint Special Operations Command prior to assuming command of Naval Special Warfare Command.

Szymanski's previous staff assignments include officer community Manager for NSW and enlisted community manager for SEALs, Navy Divers, EOD Technicians and Special Warfare Combatant-craft Crewmen. He served on the Joint Staff as the J3 deputy directorate for Special Operations as the Global War on Terror branch chief and as chief staff officer of Pakistan-Afghanistan Coordination Cell.

HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

VAYL OXFORD

DIRECTOR
DEFENSE THREAT REDUCTION AGENCY

TESTIMONY BEFORE THE

SUBCOMMITTEE ON INTELLIGENCE AND EMERGING THREATS AND CAPABILITIES
HOUSE ARMED SERVICES COMMITTEE
FEBRUARY 11, 2020

Embargoed until February 11, 2020 at 2:30pm

HOUSE ARMED SERVICES COMMITTEE

Chairman Langevin, Ranking Member Stefanik, and distinguished members of the committee, thank you for your continued support of the Defense Threat Reduction Agency (DTRA). I am proud to appear today alongside , the Honorable Mr. Al Schaffer, Ms. Theresa Whelan and Vice Admiral Tim Szymanski, to update you and the American people on our collective efforts to protect U.S. national security interests in a rapidly evolving, globalized threat environment. It is my privilege to represent DTRA, an adaptive, integrated, and agile combat support agency with a uniquely skilled workforce. Our personnel have a strong foundation in specialized science, technology, engineering, mathematics, linguistics, and operational expertise with a focus on strategic deterrence, weapons of mass destruction (WMD), and improvised threats and their associated networks. Their passion for the mission and dedication to the Nation, and strong relationships with our valued partners here today are what makes our organization so successful.

DTRA continues to prioritize support to the Combatant Commanders, leverage and expand relationships with interagency and international partners, deliver capabilities to drive warfighting effects, and empower DTRA leadership and staff to meet mission needs. DTRA ensures a strong nuclear deterrent, enables the DoD to win conflicts, and provides our stakeholders with the capability to compete across different levels of conflict with China, Russia, Iran, and North Korea, while maintaining pressure on violent extremist organizations (VEOs).

Since appearing before the committee last year, DTRA has continued its efforts to align with the 2018 National Defense Strategy (NDS) with a specific focus on the three key tenets of that strategy: a strong and effective nuclear deterrent, a decisive conventional force, and capabilities to compete below the level of armed conflict.

The Defense Department's highest priority mission is our nuclear deterrent, which underwrites every military operation around the world and is the ultimate guarantor of our national defense. A credible nuclear deterrent and decisive conventional force are intended to prevent any adversary from waging war with the United States, while the third element stresses the need to counter the influence and threat networks associated with the NDS-identified adversaries. Collectively, strength in these areas is intended to deter conflict, but ensure the United States can fight and win if necessary. Predicated on this, DTRA has adopted a counter threat network methodology to support efforts to compete in the Gray Zone while enhancing our priorities to supporting a strong nuclear deterrent and a decisive conventional force. Inherent to

implementing our approach is the increased focus we have placed on support to the warfighter, while also enhancing our relationships with interagency and international partners. To accomplish these goals, we have amplified our relationship with USSOCOM to address the global nature of the threats we face in support of the respective coordinating authorities for China and North Korea (USINDOPACOM), Russia (USEUCOM), Iran (USCENTCOM), and counter-VEOs (USSOCOM).

As we have aligned with the NDS, while focusing on the three key tenets and amplifying our relationships with the warfighter, we have also realigned our organization to posture for the changing strategic environment and increased demand from the Combatant Commands (CCMDs) for our support. The overarching goal was to integrate our operations and strategic functions and create cross-functional country teams that focus on the NDS-identified threat actors. We accomplished this by expanding our operational analysis functions across the counter-WMD (CWMD) and counter improvised threats missions. This new approach ensures the agility to address the emerging needs of the warfighter, while maintaining a steadfast and globally integrated focus on supporting the overarching objectives of the NDS.

Activities and Impacts

The breadth of DTRA's capabilities and transregional nature of our mission allows us to play a unique role in supporting the CCMDs in this complex security environment. DTRA's counter threat network methodology delivers integrated solutions to CCMDs to help them better understand the global networks undergirding Chinese, Russian, Iranian, North Korean, and VEO influence and operations. Our activities help the warfighter to identify opportunities to disrupt those networks by leveraging DoD and interagency authorities, global access, and partnerships abroad. This approach enables us to bring our capabilities to bear when warranted, or to enable a partner that has the necessary authorities and ability to act short of armed conflict in support of U.S. priorities.

The capabilities DTRA can bring to bear in direct support of the CCMDs are focused to maximize impact: our modelers and weaponeers provide critical targeting solutions and

consequence of execution analysis based on CCMD requests. We develop offensive and defensive capabilities to support CCMD operations and influence the threat calculus of our adversaries. Our partnership activities build partner capacity, increasing CCMD ability to compete across the spectrum of strategic armed conflict, conventional armed conflict, and competition below armed conflict to counter malign influence. Most importantly, we support a strong and reliable nuclear deterrent in alignment with the NDS and 2018 Nuclear Posture Review (NPR). All of this is amplified daily by our embedded forward footprint supporting the Commands, task forces, and interagency with direct, tailored, and strategically-informed support to the warfighter on Departmental priorities.

Strong Nuclear Deterrent

As Secretary Esper stated in his confirmation hearing, the United States' strong nuclear posture and capabilities have "…kept the peace with regard to deterring nuclear war for 70 years now." A strong, credible nuclear deterrent underpins all other Joint Force operations. Informed by knowledge of adversary nuclear modernization efforts, we fully support the modernization of the United States' nuclear triad. From the CWMD perspective, a strong nuclear deterrent is an important complement to, and enabler of, the CWMD mission. DTRA prioritizes its mission to support credible nuclear deterrence, and conducts an array of activities with a highly specialized cadre of nuclear professionals that ensure that the United States is always ready to deter strategic attack and respond if necessary.

While DTRA's support to the nuclear deterrent runs through and across our portfolio of mission capabilities and appropriation lines, three programs in particular are closely linked and work together to support the strategic nuclear enterprise by ensuring that the U.S. nuclear deterrent is reliable, accountable, resilient, and ready to respond. These are the Mission Assurance (MA), Defense Nuclear Surety Inspection Oversight (DNSIO), and Defense Integration and Management of Nuclear Data Services (DIAMONDS) programs.

The MA program helps with resiliency and survivability by conducting rigorous on-site assessments. DTRA deploys MA teams that assess risk and provide recommendations on

mitigating risk to our strategic forces. In response to the evolving threat environment, we have incorporated cyber and counter-small unmanned aerial system (UAS) risk management into all of our MA activities. We have conducted approximately 70 such MA assessments in FY19-20 that resulted in the delivery of risk management strategies that helped strengthen the resiliency of critical infrastructure. Our forward-leaning efforts, demonstrated record of success, and extensive interagency collaboration resulted in DoD recently designating DTRA as the Mission Assurance Center of Excellence. (O&M)

DTRA MA teams have been instrumental in ensuring the integrity of our Nation's nuclear command, control, and communications (NC3) systems. Over the last three years, DTRA has conducted over 25 MA vulnerability assessments of critical NC3 infrastructure. Based on the results of these assessments, DTRA produced a comprehensive, trends-based report that was delivered to the Council on the Oversight of National Leadership Command, Control, and Communications Systems to further inform senior decision makers of inherent risks posed to NC3 systems, and to provide effective risk mitigation options. This report will be utilized to further enhance the resiliency of NC3 infrastructure, ensuring a strong and credible nuclear deterrent. **More information may be provided in our closed session.** (O&M)

Our MA program provided an independent risk analysis of an Air Force Global Strike Command (AFGSC)-operated Weapons Generation Facility (WGF) in FY19 at the request of the AFGSC Commander. The assessment focused on the containment of blasts and contamination releases, radiation monitoring, and physical security at the WGF, validated several AFGSC risk assessments, and provided recommendations to further enhance WGF resiliency. As the WGF design matures, DTRA will continue to collaborate with the Air Force to independently review risks posed to WGFs—from physical security and MA perspectives—to help ensure that the Air Force's WGFs are mission-capable and resilient against all threats. (O&M)

We are also able to incorporate multiple Agency capabilities to provide integrated solutions to the warfighter. We, for instance, combined our MA expertise with our threat network and prediction analysis to provide an advanced operational understanding of enemy behaviors and patterns that resulted in threat forecasting for USAFRICOM that saved U.S. lives. This network analysis was put to use in the Horn of Africa in FY19, when DTRA provided Special Operations Command Africa (SOCAF) the most likely scenario of an enemy attack at Baledogle Military

Airfield (BMA), Somalia. DTRA's assessment of BMA revealed critical vulnerabilities that, once mitigated, helped save American lives following an armed assault on September 30, 2019 by Al-Shabaab. The next attack occurred as predicted, and within the timeframe and location that DTRA forecasted, resulting in the successful defense of the location that included more than 400 personnel. (O&M)

The second key component of our support to the nuclear deterrent is the DNSIO program, which provides a critical capability to the Chairman of the Joint Chiefs of Staff (CJCS) by ensuring the Military Services provide consistent and compliant inspections for their nuclear forces in the performance of their duties. To achieve this, the DNSIO continuously conducts common training, and in FY19-20 conducted more than ten independent assessments of Air Force and Navy Nuclear Surety Inspection Teams that ensured the forces that comprise our nuclear deterrent are in compliance and ready to respond if needed. (O&M)

The DIAMONDS program represents the third component of DTRA's core support to the nuclear deterrent, providing knowledge management systems that ensure accountability and readiness to the DoD, interagency, and international partners. DIAMONDS serves as the sole DoD-level nuclear weapons reporting function, and in FY19, for the first time in its 70-year history, DTRA and the Department of Energy (DoE) successfully collaborated to connect DTRA's DIAMONDS system to the Enterprise Secure Network, a DoE-hosted system that facilitates the secure exchange of classified information and capabilities across the Nuclear Security Enterprise. This effort aligns with the NPR's strategic guidance to pursue joint DoD and DoE advanced technology development capabilities to ensure our efforts are appropriately integrated. (O&M)

Additional support to the nuclear deterrent comes from a variety of programs at DTRA. One such is an Enhanced Consequence Analysis (ECA) capability toolset. DTRA is developing ECA tools in support of USSTRATCOM's requirement to better understand nuclear weapons effects as required by NPR. These tools will improve nuclear effects and response models for the strategic nuclear planning community that integrate nuclear planning models into conventional Joint Force operational planning models. DTRA's support will greatly enhance USSTRATCOM's consequence analysis capability by providing them with the improved

modeling and simulation tools they need to conduct analysis on operationally relevant nuclear weapons effects. (RDT&E)

A continuing threat to our Nation's forward deployed military assets is the proliferation of UAS. Over the last year, DTRA conducted a set of comprehensive UAS vulnerability assessments, and produced a detailed report identifying several vulnerabilities and risk mitigation options to counter UAS threats in advance of sensitive military operations in Europe. Our report's findings, which were delivered to USEUCOM, effectively enabled the Joint Force to mitigate the most crucial threats posed by UAS and achieve mission success. In addition, our DTRA team is conducting after action reviews following each vulnerable operation, and will provide a comprehensive report to USEUCOM for future use. (O&M)

DTRA's Technical Support Groups (TSGs) also offer an additional means to build readiness within the strategic nuclear enterprise. TSGs provide unique equipment, training, subject matter expertise, and direct operational assistance to the Joint Force that enable rapid detection, location, identification, and neutralization of threats posed by chemical, biological, radiological, and nuclear (CBRN) materials of concern. In FY19-20, our TSGs trained over 1,200 Joint Force personnel that ensured strategic force readiness to rapidly respond to WMD threats around the world. (O&M)

DTRA supports the next generation nuclear workforce through the Defense Nuclear Weapons School (DNWS) that provides specialized joint training in U.S. nuclear weapons, incident and accident response, explosive ordnance disposal threat response, and counter-proliferation. In response to a changing threat environment, DNWS has developed new courses to educate the Joint Force on the seamless planning and operations of nuclear and conventional forces across a spectrum of conflict—up to and through a nuclear employment environment. In FY19, the DNWS educated approximately 20,000 Joint Force and interagency personnel in over 40 courses. We continue to work closely with the Joint Staff and OSD to develop courses on conventional nuclear integration capabilities mandated by the NPR to ensure a strong and credible nuclear deterrent. (O&M)

Maintaining the historical record of decades of nuclear testing data informs current and future policy and programming decisions within the strategic nuclear enterprise. The Defense Threat Reduction Information Analysis Center (DTRIAC) is using machine learning to help curate

millions of documents, photos, and film reels related to past U.S. nuclear testing. Use of this technology is accelerating a process that would take decades to unlock the full scientific value of billions of dollars of nuclear testing data collected over half a century. This effort provides experts at DTRA and its partner organizations to search, retrieve, and derive meaning from enhanced records that ensures a complete understanding of nuclear weapons effects gained from U.S. testing data. (RDT&E)

Effective and verifiable arms control enhances nuclear deterrence by providing stability and transparency in support of national security and defense strategies. For over 30 years, DTRA has executed highly sensitive, intrusive on-site activities across an array of conventional, chemical, and nuclear treaties on behalf of DoD and the Nation. With revisionist powers pursuing modernized and novel nuclear forces, and conducting unusual and unexpected military activities, DTRA's ability to inspect adversarial forces, provide unique insights, and protect CCMD equities is perhaps more relevant now than at any time since the fall of the Soviet Union.

The New START Treaty, for example, affords the U.S. access to Russian strategic nuclear forces, including inspections of treaty accountable systems and exhibitions of new systems that fall within treaty definitions. DTRA executes 18 inspections a year to confirm Russia's declarations on precise locations, numbers, status, and load-outs of its treaty-accountable nuclear weapons systems. Since entry into force, DTRA has continued to make initial observations for new systems. Most recently, in November 2019, DTRA participated in a treaty-mandated exhibition of Russia's newest strategic delivery system, the RS-18 (Variant 2) intercontinental ballistic missile (ICBM) Avangard, which was designed to deliver the nuclear capable hypersonic glide vehicle. This was the first time U.S. personnel had an opportunity to observe this system up close. Following the exhibition, the Kremlin announced it had placed the first Avangard missile systems on operational alert. The Avangard missile system is subject to all Treaty provisions applicable to ICBMs, including data exchanges and on-site inspections, for as long as the Treaty remains in force. (O&M)

Decisive Conventional Force

A powerful conventional maneuver force and Special Operations Forces are necessary to complement strategic deterrence assets. As a combat support agency, DTRA's mission is integrally tied to providing the warfighter the capabilities they need to win on the battlefield. Our counter threat network methodology combines understanding with capabilities to provide the warfighter with not only a unique set of tools, but increased awareness of the battlespace to more effectively use them.

A key capability for enhancing support to our conventional forces is providing CWMD subject matter expertise to warfighter planning efforts. DTRA provides CWMD experts to the Geographic and Functional CCMDs to integrate into their strategy and planning functions to address the challenges posed by the threat actors identified in the NDS. As directed by the Chairman's Joint Strategic Campaign Plan and specific CCMD requests, DTRA deployed CWMD plans and operations specialists to assist CCMDs with priority planning efforts. DTRA's CWMD specialists work to integrate information on current and emerging WMD threats and relevant risk-mitigating capabilities into CCMD campaign and contingency plans that protect the Joint Force and enable achievement of CWMD-related objectives and end-states. (O&M)

Of particular importance in the CWMD realm, we provide our expertise and collaborate closely with USSOCOM, the Coordinating Authority for the DoD Functional Campaign Plan (FCP) for CWMD. With the support of DTRA personnel, USSOCOM is developing a new capability to enhance situational awareness of WMD threats and CWMD activities in real time through a common operating picture that can overlay threats and activities across the globe. In FY20, DTRA continues to synchronize the Agency's activities with SOCOM's. We are mapping our efforts to their Pathway Defeat model, and closely coordinating planning with their co-located Fusion Cell in a continuing effort to integrate into USSOCOM's activities. We also coordinate with members of the Intelligence Community, including the Defense Intelligence Agency, as they perform intelligence tasks in support of the DoD FCP for CWMD. (O&M)

A key line of effort toward achieving a decisive conventional force is leveraging available technologies. DTRA is driving the interagency in the adaptation of artificial intelligence/machine learning (AI/ML) techniques to the CWMD and counter-improvised device mission space. For instance, leading edge capabilities have been developed that allow computers

to independently build three dimensional models of underground facilities that are based on the best intelligence and geospatial data available to the US government. This new capability will greatly enhance the analysis and throughput of target planning and execution by shifting what are now significant manpower burdens onto computer systems. While the analysts will ultimately check on the computer output, this new capability vastly increases their efficiency.

DTRA's extensive research and development program also significantly enhances the capabilities of our conventional forces. Combatant Commanders have increased their demand for such capabilities, including DTRA targeting and weaponeering tools such as DTRA's Integrated Munitions Effects Assessment (IMEA). IMEA version 12.0.1 was accredited in FY19 as an enterprise solution for the Joint Technical Coordinating Group for Munitions Effectiveness, providing the warfighter with estimates of effectiveness for conventional air-delivered munitions against buildings, bunkers, and tunnels. DTRA is applying AI/ML tools to detect patterns in targets, improving speed and efficiency in responses to the warfighter. IMEA is used by DTRA subject matter experts (SMEs) in support of warfighter requirements for combating hardened and deeply buried WMD targets. **The software tool provides target characterization and weapon effects response predictions capabilities that can be discussed at a higher classification during closed testimony**. (RDT&E)

An example of a capability that promises to immediately bolster the ability of the Joint Force to counter WMD, improvised threats, and their associated networks is the Pegasus IIe UAS. DTRA completed testing and certification of the Pegasus IIe in FY19 and successfully conducted the first iteration of operator training with two end users for use of Pegasus IIe in deployable operations. When equipped with the appropriate sensors, the Pegasus IIe performs reconnaissance and mapping of locations utilizing a dual-modal, unmanned system that provides real-time situational awareness to operators while keeping them out of harm's way. **We can discuss more sensitive details of this program and our activities in a classified setting.** (RDT&E)

DTRA RDT&E also supports operating forces' capabilities to monitor and respond to CBRN incidents, mitigate hazards and their effects, and allow military personnel and other mission-critical personnel to continue operating effectively. Recent licensure by the U.S. Food and Drug Administration of the first and only Ebola Virus Disease vaccine in FY20, following the

conditional marketing authorization of that vaccine by the European Medicines Agency, exemplifies DTRA's pioneering approach toward the development and approval of medical countermeasures to protect the warfighter. Due to DTRA-funded research and development, over 290,000 doses have been administered in the U.S., EU, and Africa, protecting health care workers, reducing the opportunity and allure of Ebola as a bio-threat agent, and protecting the warfighter. (RDT&E)

As part of our research and development efforts, DTRA is investigating thermal defeat and advanced energetic formulations to defeat chemical and biological (CB) agents and targets while minimizing collateral effects. Derived from documented warfighter requirements, the current threat assessment, and the warfighter's desired end-state, this program is currently focused on development of payloads and optimized warheads for use in conventional air-delivered weapons. The weapon performance and effectiveness metrics are tied to both the destruction of the material and its capability to minimize collateral effects. An advanced energetic and thermal defeat weapon can provide the warfighter with an enhanced capability to defeat CB agents and targets that minimizes collateral effects. (RDT&E)

DTRA is investing in promising new technology to hold ballistic missile delivery systems at risk prior to or shortly after launch in denied environments. The DTRA concept combines persistence in the operational environment with an inherent rapid response capability to provide US forces with a defeat option that is complementary to mid and terminal engagement interceptors by "thinning the herd" and holding other time-sensitive targets at risk. Its technology innovations and means of deployment would provide a significant cost savings compared to other candidate weapon systems. (RDT&E)

In response to warfighter requests for an improved radiological and nuclear detection capability as a part of the Integrated Early Warning Program, DTRA developed a chemical, biological, radiological sensor system that can be rapidly deployed globally on existing U.S. transport aircraft. With state of the art radiation sensors, this system will provide improved detection to rapidly identify and map radiological hazards while providing early warning and hazard avoidance information to ground forces. The integration of sensors with existing command and control networks will enable rapid analysis and dissemination of hazard information across the Joint Force. Be it handheld or mobile operations from the vehicle, or on unmanned platforms,

this new capability will provide the warfighter with improved and timely situational awareness of nuclear threats and inform battlefield operations. (RDT&E)

DTRA provides a security capability for sensitive activities to the warfighter to increase their CWMD capacity. DTRA conducted threat surveys and security training to prepare a secure environment for three different partner nations, 26 agencies, and over 30 technologies at a CWMD capability gaps and end user training event. DTRA's security vigilance resulted in the full protection of sensitive technologies vital to the national defense of the U.S., partners, and allies; protection of niche tactics, techniques, and procedures that provide the U.S. the technical advantage to deter adversaries; and protection of personnel enabling WMD operations. The security that DTRA provided to the event and the site will enable DTRA, other government agencies, and allied partners to use this site in the future for sensitive events. **We can discuss more sensitive details of this program and our activities in a classified setting.** (O&M)

DTRA further supports the warfighter by maintaining a unique national test bed capability that enables full-scope research and development activities that advance our ability to counter WMD and improvised threats, and better support nuclear deterrence. DTRA's test beds are situated across a wide variety of geographic and climatic locations to provide responsive test design and essential data capture. They include facilities for simulated WMD testing, weapon-target interaction, and WMD facility defeat testing. Test facilities at Kirtland AFB and White Sands Missile Range enable DTRA to conduct rigorous, repeatable, and scalable testing against hard and deeply buried targets, simulated chemical and biological agents, testing of nuclear and radioactive materials sensors, tests on specific weapons effects, testing of the structural viability and survivability of buildings and building materials, and weapons effectiveness testing against various conventional weapons enhancements and underground structures. (RDT&E and O&M)

DTRA is also bringing its technological expertise to bear via our countering threat networks capabilities, applying its data analytics capabilities to enable CCMDs to illuminate WMD procurement networks and, through partnership with the interagency, disrupt their activities. In FY19, DTRA designed and automated a process to triage millions of export records, enabling USCENTCOM to continuously monitor monthly export records for indicators of proliferation for the first time. As a result of this support, USCENTCOM was able to identify and transition over a dozen Iranian procurement leads to the interagency for action using their combined authorities

for maximum effect. DTRA has since developed a web-based application to support the warfighter's self-service use of the analytics and scale the process globally to address broader threat networks. (O&M)

On a larger scale, Catapult—a mission-driven IT solution and data analytics platform designed and fielded by DTRA—integrates more than 1,100 intelligence data sources that support the detection and identification of improvised threats, threat networks and actors, command and control, operations, intelligence, and engagements. Catapult fuses more than 192 million documents powering over 160 tools used by 12,600 users per month from across the DoD, Intelligence Community, and Law Enforcement. Catapult supports the Joint Force, interagency, and international mission partners enabling them to attack, neutralize, and defeat both current and emerging improvised threats and threat networks. Current AI/ML deployments within Catapult focus on producing insights derived from text documents at scale, delivered through intuitive applications, emphasizing Natural Language Process-driven machine learning solutions to help automate manual tasks. For example, our counter-UAS application has automated the process that identifies relevant drone activities distilled from tens of millions of reports worldwide to enable end users to rapidly make timely, data-informed analysis connections within seconds. Current in-progress AI/ML deployments focus on the use of deep learning in our DevSecOps pipeline, improving the efficiency of entity extraction and correlation to rapidly identify underlying patterns across global improvised threat networks as well as deep-learning object classifiers to rapidly accelerate the time our Visual Modeling and Simulation team can build 3D models supporting force protection and operational planning. Across 2019, our machine learning models were utilized over 335,000 times by 5,300 users supporting tactical, operational, and strategic mission requirements. (O&M, RDT&E)

Competition Below the Level of Armed Conflict

An area that DTRA has focused significant attention and resources on is the so-called Gray Zone, where state and non-state actors have steadily eroded U.S. influence and advantage around the globe by competing with us below the level of armed conflict. DTRA has transformed its

counter threat network methodology from a VEO focus to combat IEDs to a worldwide, transregional focus that enables understanding of near-peer adversaries and provides solutions to Combatant Commanders in an era of Great Power Competition. Integrating that methodology into all of our activities has allowed us to realize more effective, efficient, and holistic support to the Combatant Commanders.

Our transition of the counter threat network approach to NDS threat actors has already begun to provide Combatant Commanders with tangible results through dedicated network analysis capabilities that support specific operational requirements. For example, in FY19 DTRA, while assessing proliferation networks in the Pacific region, illuminated a network of ships providing North Korea with illicit oil through ship-to-ship transfers. This threat network understanding is supporting efforts to identify the networks that are facilitating sanctions evasions and is providing that information to USINDOPACOM for synchronization with other intelligence information needed to disrupt these networks. (O&M)

For USEUCOM, DTRA also applied its counter threat network capabilities to identify vulnerabilities and threats to U.S. installations and personnel in support of U.S. Army Europe (USAREUR). The network analysis of Force Protection threats that DTRA provided to USAREUR and European law enforcement agencies resulted in actions to deny adversary access to U.S. bases. (O&M)

In USCENTCOM, our counter threat networks methodology has also successfully leveraged our counter-UAS expertise. In support of countering USCENTCOM's highest priority threat, DTRA conducted an assessment of how Iran's proxy Huthi network executes long-range attacks with UAS. We adapted an early warning system that successfully enabled U.S. Forces to assist partner nations in detecting and defeating the type of long-range UAS attacks the proxy networks were conducting. When the enemy adapted its technique to conduct a short-range UAS attack against the Kingdom of Saudi Arabia, DTRA reassessed the enemy's evolving tactics, techniques, and procedures and shared its findings with the U.S. Combined Training Centers and partner nations to improve their counter-UAS training and force readiness to defend against UAS. With this and similar activities, we continue to work with a community of interagency and international partners to exploit captured enemy UAS material and enable international action to

stop the facilitation of critical UAS parts and components from landing in the hands of Iranian proxies. (O&M)

Since 2018, DTRA has dedicated resources to increase the capabilities of our Combatant Commanders through Opportunity Analysis (OA), a structured collaboration technique we apply to the Combatant Commanders' most pressing and complex challenges. Working alongside interagency and international experts, we examine Combatant Commander-driven priority issues to identify a bevy of whole-of-government solutions. These potential solutions exist across different authorities, levels of conflict and cooperation, and different time horizons to provide national security decision makers an unprecedented range of analysis and corresponding options. Our OA capability has grown significantly, and begun to provide a real return on investment. In particular, an OA team supported USCENTCOM and USSOCOM counter proliferation efforts against a threat actor that resulted in the development of a framework to counter an imminent WMD threat, and served as the basis for a CJCS PLANORD that is currently driving development of options short of a contingency response. **More details on this critical support can be shared in a classified setting.** (O&M)

Building out our friendly networks and increasing U.S. influence in partner nations necessarily impacts the networks and influence of our competitors. One of the most effective ways to increase the depth and breadth of our friendly networks within partner nations is the DoD's array of building partner capacity (BPC) activities.

BPC activities at DTRA are funded through O&M. Separately, our Cooperative Threat Reduction (CTR)-funded activities utilize Title 50 authorities that complement DTRA's O&M Title 10 funding. As a part of integrating these different but complementary missions, DTRA has created an integration cell that coordinates all CTR and O&M BPC activities for maximum impact, ensuring our investments and activities meet strategic priorities and warfighter's needs and provide the greatest return-on-investment possible.

CTR enables DTRA to reduce the threat of WMD and WMD proliferation against U.S. interests; this includes working through partners that share our WMD threat reduction objectives and often involves our helping build the partner's capacity or improve its capabilities. At USINDOPACOM's request, DTRA's CTR experts advised Australia and New Zealand on how to replicate the successful DTRA-funded Philippine National Coast Watch System within

Oceania. By utilizing existing, low-cost maritime tracking and awareness sensors and software, Australia and other partner nations will be able to detect and track potentially illicit cargo without any formal agreements, and without replication of large-scale infrastructure investments. Once implemented with the benefit of lessons learned from DTRA's work in the Philippines region, our partners will be able to independently secure shipping lanes, reduce potential proliferation activities, and position the United States to be the partner of choice while reducing Chinese influence in the region. (CTR)

Our CTR efforts with Jordan continue to yield security benefits to help this critical partner protect against CBRN trafficking. Recently, DTRA provided the Jordanian Armed Forces' (JAF) the capability to respond to an incident at a Syrian border crossing. Thanks to DTRA training, JAF soldiers identified a Syrian man attempting to enter Jordan with a suspicious substance. Using DTRA-provided equipment and training, the soldiers conducted preliminary checks of the substance and notified the JAF Chemical Support Unit (CSU) after an alert was triggered, who used a series of detection and analytical devices furnished by DTRA to isolate and test the material. While the material turned out to be non-CBRN, the incident demonstrated the successful operationalization of DTRA-provided counter-WMD trafficking capabilities and, had the substance been WMD material, the professionalism of the response unit would have saved lives. (CTR)

In FY19, DTRA's work to increase the biosurveillance capabilities of partner nations across the African Continent resulted in notable real world impacts. For example, Ugandan officials at the Mpondwe Border Crossing correctly identified and isolated a suspected Ebola-infected person entering from the Democratic Republic of Congo, and the DTRA-supported Uganda Virus Research Institute confirmed the patient to be Ebola-positive. Thanks to DTRA support provided prior to the Ebola outbreak, Uganda continues to demonstrate that it is well prepared, equipped, and trained to effectively detect and address Ebola cases, thereby preventing the further spread of dangerous pathogens, protecting the Joint Force from especially dangerous pathogens in the region, and further strengthening the U.S.-Uganda relationship, eroding Chinese and Russian influence. (CTR)

As a result of CTR's previously-provided threat reduction training, efforts, and the assistance of our U.S. Government partner the U.S. Agency for International Development (USAID), local

officials in Thailand detected the first case of a novel coronavirus on January 13, 2020, only days after its initial discovery in Wuhan, China. Thai officials announced that a Chinese patient had been positively identified as a carrier of the novel coronavirus thanks to the biosurveillance program at Chulalongkorn University—a longtime DTRA partner in Thailand. The advanced capabilities of Thailand's biosurveillance program are the direct result of support from our Biological Threat Reduction Program (BTRP), which equipped Chulalongkorn University for emerging infectious disease (EID) detection and surveillance. Thai officials publicly thanked DTRA and our USAID partners for the support that may have prevented an outbreak, demonstrating the success of DTRA's work to enable early detection and warning of EIDs, whether man-made or naturally occurring, and further bolstering the U.S. Government's influence as a partner of choice for this key Southeast Asian partner. (CTR)

In FY19, three of our O&M CWMD partner engagement programs – the International Counterproliferation Program (ICP), Proliferation Security Initiative (PSI), and CBRN Preparedness Program (CP2) – completed 274 engagements in 24 countries across six CCMD regions, providing enhanced CWMD understanding and capabilities to approximately 4,100 participants. For FY20, those same programs anticipate completing 290 events in 27 countries with more than 4,300 participants. We have worked to ensure our BPC activities align to the NDS, enabling DTRA to work with its partners to build CWMD capacity to reduce the threat of WMD proliferation and be prepared to respond to WMD or CBRN incidents. These programs also have important effects in support of broader U.S. initiatives by bolstering U.S. partnerships in parts of the world where revisionist powers are eager to exert malign influence through regional partnerships at the expense of U.S. objectives.

DTRA's efforts in the Philippines provide an example of DTRA CWMD partner building programs working in harmony to develop a high level of CWMD expertise with one of the United States' most significant regional partners. In FY19 we implemented a multi-year plan of engagement to develop host-nation capability to establish and operate an Emergency Operation Center during a CBRN incident and sustain a WMD response. DTRA's BPC in the Philippines has contributed to this partner nation becoming a CWMD regional leader in an area of great geopolitical importance, and aided U.S. CWMD objectives in this region's maritime shipping

lanes by enhancing capabilities to detect and interdict proliferation of WMD and related materials in Southeast Asia. (O&M)

Following DTRA participation in the Indonesia Bilateral Defense Dialogue, our CWMD BPC team is coordinating on a memorandum of understanding with Indonesia for future collaboration and coordination, bolstering the relationship with a key partner nation that is geographically important, a CCMD-priority country, and challenged by the maligned influences of state and non-state actors. The memorandum outlines the potential for counter-proliferation and CBRN response capability development support from several DTRA authorities, which will improve Indonesia's ability to interdict CBRN material transfers and respond to CBRN incidents. (O&M)

An example of DTRA's integrated and complimentary BPC approach across O&M- and CTR-funded programs focuses on a recent joint assessment conducted in Romania and Bulgaria, with full coordination and approval from USEUCOM, to identify partner capacity gaps, define requirements, and begin building relationships with these two countries to reduce the threat and risk of WMD proliferation. This combined approach is ensuring a unified DTRA presence that brings the right mix of activities to bear to increase our partners' capacity in this strategically important area, and will ultimately lead to reducing the proliferation of WMD material in the region and, as a secondary effect helping to make the United States the partner of choice. (CTR and O&M)

DTRA also helps build partner capacity by participating in the Proliferation Security Initiative (PSI) with partner nations as part of an ongoing global effort to counter WMD. PSI is a global political initiative that aims to stop trafficking of weapons of mass destruction (WMD), their delivery systems, and related materials to and from states and non-state actors of proliferation concern. Beginning in 2014, six endorsing states came together to host an annual dedicated PSI exercise in the Indo-Pacific on a rotating basis under the Asia-Pacific Exercise Rotation (APER). DTRA supports USINDOPACOM and APER by providing design, planning, execution, facilitation, logistics, and counterproliferation expertise for each yearly exercise. In FY19 the U.S. supported the Republic of Korea in its execution of Exercise Eastern Endeavor 19 in Busan, the final APER event in the first rotation, with 26 partner nations participating. In FY20, DTRA will support APER as USINDOPACOM hosts Exercise Fortune Guard 20 (FG20) in Honolulu, Hawaii in August 2020. FG20 will include moderated discussion panels, an at-sea ship boarding

demonstration (LIVEX), and a port-level interdiction and CBRN capabilities demonstration (PORTEX) among other activities in this week-long event. All 20 PSI endorsing states in the INDOPACOM region will be invited to participate, along with several non-endorsing states such as China, India, and Indonesia. The APER series and FG20 demonstrates the will and whole-of-government capacity resident in the Indo-Pacific to stop shipments of WMD, their delivery systems, and related materials. (O&M)

In FY19, DTRA also supported USSOUTHCOM's execution of a multilateral PSI event in Argentina that included more than 100 foreign officials from South American partner nations, including Brazil, Chile, Colombia, Paraguay, and Argentina. Various panels covered topics such as proliferation risks inherent in in the region, legal issues relating to evidence disposition, and proliferation finance. This event proved effective in furthering regional cooperation among the participating countries and showed U.S. support for South American concerns related to transregional security issues. (O&M)

DTRA's ICP also conducted the first International Joint Bioterrorism Investigation course in South Africa, which brought together key personnel from their public health and law enforcement agencies to participate in a five-day course. This critical course builds law enforcement capacity to respond to WMD-related incidents in coordination with public health specialists from across the South African interagency. More broadly as the U.S. works to strengthen ties with South Africa, which has formal cooperative relationships with Russia, China, and Iran, DTRA's BPC activities provide valuable interactions with mid- to senior-level government officials in Pretoria and encourages South African interagency cooperation. (O&M)

Mission Enabling Functions

Providing combat support to the warfighter requires mission enablers within our own organization. From information technology to human resources, our contracts and logistics, and specialized staff functions, none of what we do in support of the Nation happens without the incredible work of our mission enablers.

One highlight in particular is talent. Given DTRA's niche mission set, we are continually working to identify critical skillsets necessary to meet both current and future needs. In FY19 we developed the NexGen Workforce initiative to conduct targeted outreach and talent acquisition that combines with DTRA-sponsored internships with the DoE's Pacific Northwest and Lawrence Livermore National Laboratories to build a talent pipeline to fulfill our workforce requirements. DTRA-sponsored internships in FY19 with these labs provided 13 undergraduate and graduate-level students with the opportunity to work on Agency projects and spark interest in our vital mission. NexGen Workforce is a model talent acquisition program that is providing us with the right people for our unique mission. (O&M)

Meanwhile, our financial management team provides the critical link between DTRA programs and financial resources in direct support of mission activities. Since FY18, DTRA has been part of the consolidated Other Defense Agencies audit, and in FY19 we received only two findings, the smallest number of any Defense Agency. DTRA's model financial management program and careful stewardship of taxpayer dollars are recognized across the DoD, and we share our expertise and best practices across OSD and the entire Fourth Estate to contribute to the auditability of the entire defense enterprise. (O&M)

Conclusion

DTRA is an agile and responsive Combat Support Agency that has evolved as the threats we face have evolved. We are aligned to the NDS and NPR, ensuring nuclear deterrence for strategic conflict, enabling decisive force to win conventional conflicts, and applying new approaches across the competition continuum to counter Great Powers and their global networks while maintaining pressure on VEOs. We will continue to prioritize support to the CCMDs, leverage and expand relationships with interagency and international partners, deliver capabilities to drive warfighting effects, and empower DTRA leadership and staff to meet mission needs. Our successes have impacts that reduce risk for the warfighter and threats to our Joint Force and the Nation. From biosurveillance that prevents deadly outbreaks such as the efforts that resulted in the first-ever FDA-licensed Ebola vaccine and the detection of the coronavirus in Thailand, to

our building partner capacity and Treaty work that enables our Combatant Commanders to compete with near-peer adversaries, DTRA stands at the fore of safeguarding our national security.

Vayl S. Oxford
Director, Defense Threat Reduction Agency

Vayl S. Oxford, a member of the senior executive service (SES), is the Director of the Defense Threat Reduction Agency (DTRA) located on Fort Belvoir, Virginia. The DTRA mission is to safeguard the U.S. and its allies from weapons of mass destruction (WMD), specifically chemical, biological, radiological, nuclear, and high-yield explosive threats, and improvised threats by providing the means to prevent and counter the proliferation of WMD and improvised threats and to reduce, eliminate, and mitigate their effects. This includes helping ensure the U.S. maintains a safe, secure, effective and credible nuclear weapons deterrent. As the DoD Combat Support Agency for the Counter WMD and improvised threats mission, DTRA develops and provides operational support for associated capabilities to warfighters worldwide.

Mr. Oxford is no stranger to DTRA, having served in several different positons with DTRA and its legacy organizations, first as a U.S. Air Force officer and then as a DoD civilian. Before being named DTRA Director, he was the National Security Executive Policy Advisor at the Department of Energy's Pacific Northwest National Laboratory (PNNL) where he was responsible for guiding the strategic direction and vision for national security issues. Before joining PNNL, Mr. Oxford spent a short time in private industry after 35 years of public service that combined time in the military and as a government civilian employee, almost all of it focused on eountering weapons of mass destruction.

He served in multiple positions in the Department of Homeland Security (DHS) from 2003 to 2009, as the Policy Advisor to the Under Secretary of Science & Technology, as Acting Director of the Homeland Security Advanced Research Projects Agency, and as the first Director of the Domestic Nuclear Detection Office (DNDO), which was created to be the single entity in the U.S. government to protect the nation against nuclear terrorism. Appointed by President George W. Bush and reporting to the DHS Secretary, he led the development of the National Strategy to Combat Nuclear Terrorism.

Prior to his appointment to DHS, Mr. Oxford served as the Director for Counterproliferation at the National Security Council, where he supported the development of the President's National Strategy to Combat WMD, the policy and strategy for WMD interdiction, and represented the NSC in the development of the National Biodefense Strategy. He chaired the interagency working group for Operation Iraqi Freedom to develop policies for combating WMD in Iraq, to include developing the initial concept for WMD exploitation and elimination, and the plan for foreign consequence management to protect civilian populations from potential Iraqi use of WMD.

From 1987 to 2002, he held several positions with DTRA and its legacy organizations (Defense Special Weapons Agency and Defense Nuclear Agency). Highlights include directing a 300 member staff and a $400M RDT&E program to defeat WMD targets. He also initiated a joint program with SOCOM to develop specialized capabilities to exploit and defeat WMD threats. As Director for Counterproliferation, he led DoD's counterforce efforts to identify, characterize and defeat WMD facilities, including oversight of two Advanced Concept Technology Demonstrations.

Mr. Oxford received his Bachelor of Science in General Engineering from the U.S. Military Academy at West Point and his Master of Science in Aeronautical Engineering from the Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio.

Mr. Oxford has numerous military and civilian awards, including the Presidential Meritorious Rank Award and the Distinguished Public Service Award for his contributions to Homeland Security.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

FEBRUARY 11, 2020

RESPONSE TO QUESTION SUBMITTED BY MS. HOULAHAN

Mr. SHAFFER. While the rapid advances in technology have made it increasingly less practical or effective to maintain a threat list, following the outcome of the GAO report 14–442SU, the Chemical and Biological Defense Program (CBDP) established mechanisms to improve stakeholder awareness of existing and emerging threats, similar to how the intelligence community has moved to Dynamic Threat Assessments to allow continuous review and updates to the threat environment. The CBDP incorporates a series of threat reviews and discussions into our planning process referred to as Threats, Risks, and Vulnerabilities (TRV) discussions. The TRV is a classified forum with the intelligence community, Services, the Joint Staff, and Combatant Commands to discuss both chemical and biological threats. This forum also considers our defensive capabilities to address those threats and is our primary mechanism for sharing threat priorities across the CBDP stakeholders. The CBDP Joint Strategic Portfolio Analysis Review process, led by the Army's Executive Agent Secretariat, and Medical Countermeasures (MCM) working groups subsequently hold follow-on discussions about the alignment of MCM research and development efforts with the threat information and the National Defense Strategy to ensure the CBDP medical portfolio addresses the highest priority threats while considering available MCM candidates and resources. These working groups meet throughout the year to address key programmatic changes, discuss program strategic guidance, address new information about changes to the threat environment, and evaluate Service vulnerabilities to inform priorities for resourcing and capability development. The CBDP is also developing an analytic methodology that will help inform these discussions by "scoring" existing and potential threat agents; an adversary's ability and intent to use the agents; and the ability of our defensive capabilities to mitigate the impacts of the threats. We anticipate having this capability available to inform our threat discussions in October 2020. We will document updated threat prioritizations in annual CBDP Planning Guidance. Additionally, the CWMD Unity of Effort (UOE) Council is working within the Department to develop a mechanism to ensure the department's priorities for CWMD, informed by threat, risk, and policy considerations, are clearly articulated across the Department. The CBDP efforts inform, and are informed by, the CWMD UOE work. In total, these efforts have improved the Department's ability to ensure that development of defensive capabilities against traditional and non-traditional threats are aligned and considered through holistic, threat-informed, and riskbased assessments. [See page 16.]

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