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**REVIEWING DEPARTMENT OF DEFENSE
STRATEGY, POLICY, AND PROGRAMS
FOR COUNTERING WEAPONS OF MASS
DESTRUCTION FOR FISCAL YEAR 2022**

HEARING

BEFORE THE

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SPECIAL OPERATIONS

OF THE

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OF MASS DESTRUCTION FOR FISCAL YEAR 2022**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS,
Washington, DC, Tuesday, May 4, 2021.

The subcommittee met, pursuant to call, at 11:01 a.m., via Webex, Hon. Ruben Gallego (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. RUBEN GALLEGO, A REPRESENTATIVE FROM ARIZONA, CHAIRMAN, SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

Mr. GALLEGO. The committee will come to order. Members who are joining remotely must be visible on screen for the person's identity verification, establishing and maintaining a quorum, participating in the proceeding, and voting. Those members must continue to use the software platform as a video function while in attendance, unless they experience connectivity issues, or other technical problems that render them unable to participate on camera. If the member experiences technical difficulties, they should contact the committee staff for assistance. Video of members' participation [will be] broadcast in the room and via television/internet feeds. Members participating remotely must seek recognition verbally, and they are asked to mute their microphones when they are not speaking. Members who are participating remotely are reminded to keep their software platform's video function on the entire time they attend the proceedings. Members may leave and rejoin the proceeding.

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Finally, I designated committee staff members to, if necessary, mute unrecognized members' microphone to cancel any inadvertent background noise that may disrupt the proceeding.

Good morning. Today, we will be hearing the testimony regarding the current and projected state of the defense apparatus to counter weapons of mass destruction. The witnesses represent the Department of Defense's extensive infrastructure necessary to comprehensively plan for, track, and mitigate the growing threats

which [comprise] weapons of mass destruction. Even with recent demonstrations by authoritarian regimes to deploy biological and chemical weapons against their own citizens, the threat of WMD is often understood as a high-yield nuclear nation killers.

However, emerging biotechnologies and illicit narcotics could be weaponized and present existential threats to the country. Synthetic biology, pardon me, synthetic biological weapons increase the opportunity for less sophisticated adversaries to create chemical and biological weapons without requiring funding, infrastructure, or materielly historic—or anything that is materiel historically necessary.

Further, the 2021 Annual Threat Assessment provided by the Director of National Intelligence highlights the growing threat from the development of chemical precursors to produce illicit narcotics such as fentanyl, which has already devastated segments of the U.S. population.

The COVID-19 [coronavirus] pandemic has shown just how devastating biological threats can be. In this case, the novel coronavirus was not weaponized, but it could be.

I am interested in hearing what we are doing to firmly detect and deter these amorphous threats. These threats are exacerbated by the rapid proliferation of accessible technologies, which are often easily accessible or commercially available, creating an omnipresent threat that must be considered strategically while preparing to confront the threats tactically.

With that, let me introduce our four witnesses who are responsible for the modernization of the Department's CWMD [countering weapons of mass destruction] strategies, policies, and programs to reflect today's threat environment with the capability and the needs of tomorrow. We look forward to hearing their testimonies regarding this critical topic.

The Honorable Jennifer Walsh, Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security; the Honorable Brandi C. Vann, Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; and Vice Admiral Timothy Szymanski, Deputy Commander of U.S. Special Operations Command; and Dr. Rhys M. Williams, Acting Director, Defense Threat Reduction Agency.

Ladies and gentlemen, thank you. I look forward to your discussion and will now recognize Ranking Member Kelly for his opening remarks.

[The prepared statement of Mr. Gallego can be found in the Appendix on page 33.]

STATEMENT OF HON. TRENT KELLY, A REPRESENTATIVE FROM MISSISSIPPI, RANKING MEMBER, SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

Mr. KELLY. Thank you, Mr. Chairman, for your opening remarks and your leadership in organizing this morning's posture hearing. Today, we will hear from four experts across the countering weapons of mass destruction portfolio.

There is a lot going on from the usual bad actors of China, Russia, Iran, North Korea, and various terrorist organizations that I look forward to hearing about during this session. The continued

use of chemical weapons by the Assad regime, poisoning of Alexei Navalny and Sergei Skripal by Russia, and research of biological weapons by China are just a few highlights of this threat.

A growing concern brought to the forefront from the ongoing coronavirus pandemic is the threat of biological weapons directed at our military and private citizens. The risk of weaponized aerosol fentanyl is just one example of many alarming and growing threats.

I am interested to hear from our witnesses today on what we are doing to not only identify these types of threats but also what we are doing to mitigate the threats both for our deployed troops and our citizens here in the homeland. I am also interested to hear our witnesses' views on the global threat posture, especially in the context of great power competition and potential for kinetic engagement with adversaries like China.

Lastly, I am deeply concerned about how the Biden administration's budget will affect our overall counter weapons of mass destruction preparedness. The ongoing use of chemical threats, coupled with the effects seen from the coronavirus, illuminates the direness of this. And it seems like failing to properly invest in these resources will have grave consequences.

I want to thank our witnesses in advance for their time today. I look forward to continuing work with our counter-WMD experts during the 117th Congress to ensure we are appropriately postured to meet and defeat the threats shaped by weapons of mass destruction.

Mr. Chairman, I yield back.

[The prepared statement of Mr. Kelly can be found in the Appendix on page 34.]

Mr. GALLEGO. Thank you, Ranking Member Kelly.

I greatly appreciate your comments and dealing with me. Next, thank you—now, we are going to move on to questions and hearing from our witnesses. We will start with Ms. Walsh. You are now recognized.

STATEMENT OF HON. JENNIFER WALSH, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR HOMELAND DEFENSE AND GLOBAL SECURITY, U.S. DEPARTMENT OF DEFENSE

Ms. WALSH. Thank you.

Chairman Gallego, Ranking Member Kelly, and members of the subcommittee, I am honored to testify on the Department of Defense's [DOD's] efforts related to countering weapons of mass destruction or CWMD. DOD's CWMD mission is to dissuade, deter, and, when necessary, defeat actors of concern who threaten or use WMD against the United States and our interests. I work alongside the members of this panel to develop the policies, strategies, capabilities, and expertise needed to accomplish this mission.

My written statement describes the WMD threat landscape. And I want to emphasize that the Department continues to improve its ability to dissuade, deter, and defeat these threats while maintaining the ability to respond to and mitigate the effects of WMD use. We have taken action to meet WMD challenges, and as the nature of WMD threats is evolving, we know we have more work to do.

The Department has three lines of effort to organize our work to counter WMD threats: prevent acquisition, contain and reduce threats, and respond to crises. To prevent acquisition or contain existing threats, the Department leverages its unique tools and expertise in support of a whole-of-government approach to mitigate the risk of global WMD proliferation and threat actors' pursuit of WMD advancements. Examples include supporting global norms under the Nuclear Nonproliferation Treaty, or NPT; remaining postured to conduct WMD interdiction, and preparing partners to do so; and implementing United Nations sanctions to prevent North Korean illicit trade.

Second, the Department leads the Cooperative Threat Reduction, or CTR, program, which works with partner nations to secure and eliminate WMD and WMD-related materials. The DOD CTR program is active in more than 30 countries and has helped a number of these to more rapidly identify and respond to COVID-19. CTR is called the Nunn-Lugar program after the two visionary Senators who championed its creation. And I want to thank Congress for its continued support for CTR, which has made and continues to make valuable contributions to U.S. and global security.

Third, we developed the capability and capacity of the joint force, allies, and partners to operate in a chemical, biological, radiological, or a nuclear, or CBRN, contaminated environment. As the Department increases focus on competition among great powers, developing the capabilities necessary for us to fight and win in a CBRN contested environment in those theaters becomes critical. The Department also works with our allies and partners to confirm that U.S. CBRN defense capabilities are interoperable and to encourage partner nations to share the burden of CBRN defense.

Achieving effects across this mission space is a Department-wide effort, and we must make hard choices about how we prioritize our activities and investments. The DOD CWMD-Unity of Effort Council brings together 20-plus stakeholders across the Department to collaborate on CWMD policy and strategic goals. In 2020, the council helped create inaugural Department-wide CWMD priorities approved by the Secretary of Defense. In 2021, we are conducting an implementation review to assess Department-wide alignment with these priorities and guidance.

As administration officials direct and develop new national and departmental strategy reviews and guidance documents, DOD's CWMD stakeholders will be focused on addressing the dynamic CWMD threat and ensuring that it gets space in these documents, including posturing the Department to mitigate biological threats more effectively and improving readiness for CBRN changes in Europe and Asia.

Chairman Gallego, Ranking Member Kelly, and members of the subcommittee, thank you for the opportunity to testify today, and thank you for your continued support for the CWMD mission. I look forward to your discussion.

[The prepared statement of Ms. Walsh can be found in the Appendix on page 35.]

Mr. GALLEGO. Thank you, Ms. Walsh. Now, let's move to Dr. Vann.

STATEMENT OF BRANDI C. VANN, ACTING ASSISTANT SECRETARY OF DEFENSE FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS, U.S. DEPARTMENT OF DEFENSE

Dr. VANN. Good morning, Chairman Gallego, Ranking Member Kelly, and the distinguished members of the subcommittee, it is an honor and a privilege to testify before you today on behalf of the men and women of the Department of Defense that comprise the United States counter weapons of mass destruction enterprise. These dedicated Americans work tirelessly to defend our brave service members, the Nation, and our international partners and allies from the increasing threat posed by the most devastating weapons created.

I would also like to thank my fellow witnesses for their dedication and commitment to our joint enterprise through which we are able to defend the Nation and our warfighters from WMD.

The CWMD enterprise ensures that the United States maintains its enduring technological advantage when countering present and emerging threats. The NCB [Nuclear, Chemical, and Biological Defense Programs] office, including the Defense Threat Reduction Agency, is responsible for ensuring the Department maintains the capability and readiness to counter WMD across the threat landscape. To that end, the NCB office is aligning ourselves to meet the direction given by the President's Interim National Security Strategic Guidance and the Secretary's three priorities. Our efforts will enable us to close today's gaps, rapidly mitigate vulnerabilities, anticipate emerging threats, and strengthen our domestic and international partnerships.

But the pace of technology continues to move faster and faster, and as a result, the players on the world stage are shifting, the conflict landscape is changing, and so are the hazards that we all face, making our jobs ever more complex. Overcoming these changes and the emergence and reemergence of unique CBRN threats requires the Department first to understand that emerging threats landscape and then develop adaptive capabilities to respond to these threats as they arise. In doing so, we can assure that the joint force can fight and win in CBRN contested environments, prepare for surprise from emerging threats, and reduce the risk that they pose.

To modernize the force, the Department will work closely with Congress as we shift emphasis from legacy systems to cutting-edge capabilities. We are moving to get ahead of the threat by anticipating and understanding the convergence of novel science and technological advances. And as a part of layered defense, we can deny the effects of WMD by developing and fielding a wide range of defensive equipment.

Further, fields such as artificial intelligence, machine learning, additive manufacturing, and rapid medical countermeasure development all provide us an opportunity to adapt our defense capabilities quickly and effectively. We should embrace the technological revolution within the private sector, and lead game-changing technology advancements to ensure our warfighters are best prepared for the future threat.

Finally, the NCB enterprise will expand our collaborations with our interagency and international partners, as well as the private

sector, to spur innovation, deepen interoperability, and leverage best practices.

Our strong relationships with our allies has brought us incredible value to our ability to protect, detect, and mitigate our forces against WMD threats, and have informed great strides in our ability to develop and acquire technologies for our force.

The NCB enterprise remains focused on anticipating the future threat by closing capability gaps and ensuring the joint force prevails in a contaminated environment. We will continue to remain behind the warfighter and ahead of the threat to ensure our joint force's ability to survive, operate, and regenerate combat power in the future.

On behalf of the NCB enterprise, I would like to thank the committee for its support and dedication to improving our capabilities to address the current and emerging threats base.

Chairman Gallego, Ranking Member Kelly, thank you again for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Dr. Vann can be found in the Appendix on page 45.]

Mr. GALLEGO. Thank you, Dr. Vann.

Next, we will have Vice Admiral Szymanski.

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

Admiral SZYMANSKI. Good morning, Chairman Gallego, Ranking Member Kelly, and members of the subcommittee. Thank you for the opportunity to represent the United States Special Operations Command [USSOCOM] today. On behalf of General Clarke, it is my privilege to join Ms. Walsh, Dr. Vann, and Dr. Williams at this hearing on how we work together to address some of the most critical national security challenges facing our country.

The 2017 Unified Command Plan directed USSOCOM to coordinate the CWMD mission across the Department, and General Clarke has sustained that strategic course. The 2021 Unified Command Plan reiterates USSOCOM's responsibility for planning the Department's CWMD efforts as directed by the Secretary. We conduct strategic planning, assess the Department's execution of the CWMD campaign, make recommendations to the Chairman of the Joint Chiefs of Staff and Secretary of Defense, and sustain the DOD-wide functional campaign plan that enables the joint force to improve coordination in countering transregional WMD threats.

The landscape of nuclear, chemical, and biological threats has continued to evolve over this past year. We monitor and analyze progression of existing and over-the-horizon WMD programs closely, with essential support from the Defense Intelligence Agency. The classification level of this forum limits the detail I can provide from our vantage point, but news headlines are a good indicator of the complexity and the nature of the threat.

We have seen norms against the use of chemical weapons continue to erode following Russia's attempted assassination of a former Russian intelligence officer with a Novichok nerve agent in the United Kingdom in 2018 and, more recently, the attempted assas-

sination of Russian opposition leader Alexei Navalny with another Novichok nerve agent in August 2020.

China meanwhile is continuing the most rapid expansion of platform diversification of its nuclear arsenal in its history, and it intends, as the Director of National Intelligence made clear in this year's Annual Threat Assessment, to at least double the size of its nuclear stockpile during the next decade and to field a nuclear triad.

And, finally, COVID-19 pandemic is a stark reminder of our collective vulnerability to biological threats. Clearly, WMDs are complex, transregional challenges that demand the application of specialized expertise and authorities across our government as well as our foreign allies and partners.

The Department of Defense plays a unique and critical supporting role to our interagency colleagues, especially at the Departments of Energy, State, Treasury, and Commerce, as well as our law enforcement entities, to prevent and contain WMD threats, even as we prepare to respond to WMD crises.

We coordinate, therefore, across not only the Department of Defense, but also with interagency colleagues and foreign allies and partners, without whom achieving U.S. objectives would be exceedingly difficult. We also work closely with the Joint Staff, combatant commands, and services to regularly assess the Department's CWMD campaign and ensure the Department's plans appropriately address changes in the WMD threat environment.

We strive to improve our methodology and ensure it provides timely, reliable, relevant, and actionable information to support senior Department decision making. Our aim is to better support senior leaders charged with employing our joint force today, developing and preparing it for tomorrow, and helping to design a military that is ready to fight and win against both current and future WMD threats.

In closing, General Clarke and I would like to thank the members of this subcommittee for their support of this important national security mission. It is a privilege to work together with our colleagues to keep our country safe from the threat of nuclear, chemical, and biological threats. We 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 60.]

Mr. GALLEGO. Thank you, Admiral.

And now we have Dr. Williams.

STATEMENT OF RHYS WILLIAMS, ACTING DIRECTOR, DEFENSE THREAT REDUCTION AGENCY, U.S. DEPARTMENT OF DEFENSE

Dr. WILLIAMS. Chairman Gallego, Ranking Member Kelly, and distinguished members of the subcommittee, thank you for your continued support of the Defense Threat Reduction Agency, or DTRA. On behalf of the nearly 2,200 members at DTRA, I am proud to appear today alongside my fellow witnesses to talk about our unique role enabling the Department of Defense, U.S. inter-

agency, and our many international partners to counter and deter weapons of mass destruction and emerging threats.

The Department of Defense established DTRA to integrate and focus the Department's expertise against the real and ever-evolving threat of the proliferation and use of weapons of mass destruction, or WMD. Under national and departmental policy and guidance and through close collaboration across the Department, inter-agency, and our international partners and allies, DTRA delivers innovative capabilities that ensure a strong, protected, and prepared joint force.

Part of DTRA's unique value stems from our roles as a defense agency and a combat support agency. In our defense agency role, we respond to requirements from the services as well as from the DOD offices, including the Under Secretaries of Defense for Acquisition and Sustainment, Policy, and Research and Engineering. These lines of authority give us strategic roles in the counter-WMD fight through nuclear mission assurance, treaty verification, building partnership capacity, and cooperative threat reduction, among many key programs.

In our combat support agency role, DTRA responds to the combatant commands and Joint Staff requirements, offering subject-matter expertise, operational analysis, and material and nonmaterial solution sets in support of counter-WMD planning and operations. These roles, on behalf of both national security policy and the warfighter, enable us to integrate efforts such that, at home and abroad, we deliver mission success to detect, deter, and defeat WMD and emerging threats.

I cannot overstate that people are DTRA's most valuable resource. Our staff includes world-class scientists developing therapeutics for emerging pathogens, chemical threats; technical linguists that help find common ground in complex international engagements; tactical specialists securing dangerous weapons and materials; and subject-matter experts on call 24/7 to provide real-time expertise and decision support analysis to all levels of government.

DTRA's military personnel ensure that we maintain a close alignment with warfighter requirements. And our capabilities are further amplified by our forward presence at the combatant commands, within task forces, and at key interagency locales.

In addition to its unparalleled workforce, DTRA is an agency characterized by partnerships and collaboration. The Center of Excellence for global counter-WMD expertise, DTRA works closely with technical peers in academia and in industry. We team with interagency partners like the Departments of State, Energy, Homeland Security, and Health and Human Services, and engage equally well with international partners. This network, spanning the breadth of the counter-WMD and emerging threats enterprise, allows DTRA to use its unique expertise to wide-ranging effect, providing integrated solutions across the spectrum of competition and conflict.

There are few greater challenges to U.S. national security than those posed by WMD and emerging threats. As the globalized threat landscape evolves, DTRA's uniquely skilled workforce and robust collaborative network of partners are ready to evolve with

it, continuing to safeguard the lives and interests of the U.S. and our allies abroad.

Thank you for your time and invitation to participate today, and I look toward to your questions

[The prepared statement of Dr. Williams can be found in the Appendix on page 70.]

Mr. GALLEGO. Thank you, Dr. Williams.

And thank you for hosting us a couple of weeks back.

We are going to now move on to the question period. Each member will have 5 minutes to ask questions. We will alternate between minority and majority, and I will take the first question.

We can only defeat the threats from weapons of mass destruction with collective action in concert with our allies, partners, as well as international bodies. I am concerned that we are not working as closely as we should with countries such as South Korea, India, and Japan.

How close are we working with South Korea to succeed in the CWMD mission? And is there anything preventing you from sharing, collaborating with our friends in South Korea? And then, lastly, how prepared—well, we will just go to that. Let's just start with those two questions. And can we start with Dr. Vann, and then, Ms. Walsh, if you can answer my first two questions. And if you need me to repeat them, please just ask.

Dr. VANN. Yes, thank you, Chairman Gallego, for that question. I think that it is important to say that when we are developing technologies with our joint force, we do work with our allies and partners, significantly, excuse me, in order to assess and test equipment and integrate our forces.

Specific to Republic of Korea, we have active in-country engagements with our allies in Korea that is seeking to not only partner in our readiness but also in reviews of our capabilities with our Korean counterparts. The rest of it I guess I will defer to Ms. Walsh, her response.

Mr. GALLEGO. Thank you, Doctor.

Ms. Walsh.

Ms. WALSH. Thank you very much. With any of our bilateral defense relationships, the issues that we raise and the capability or capacity development that we work together, it is a bilateral process. And so it is not just about the U.S. offering; it is about another country being a willing partner.

With respect to the Republic of Korea, we have very close bilateral relationships, mil to mil, across the chemical, biological, and nuclear cooperation. The Cooperative Threat Reduction Program has activities across the chem, bio, and nuclear space. We are working with our Republic of Korea allies to ensure that we are ready for a WMD contingency. Regardless of what the threat is, the Koreans bear responsibility, we bear responsibility, to ensure that what we have committed to each other is on track and that we can deliver those capabilities. We meet annually in a CWMD bilateral forum with our Republic of Korea counterparts so that we can ensure that we have trust and confidence. And then, obviously, U.S. Forces Korea has daily contact with their Korean counterparts. These issues are definitely top of the list of concerns and threats,

and, therefore, these get attention to be sure that we are prepared to work with them. With—I am sorry?

Mr. GALLEGO. No, go ahead. I am sorry. I apologize.

Ms. WALSH. You had also asked about Japan.

With Japan, discussions about WMD are handled through our bilateral relationship channels. The Cooperative Threat Reduction Program is not active in Japan. But I can assure you that we speak regularly about ensuring that through extended deterrence and U.S. capabilities, that these conversations do happen on a bilateral basis with our Japanese counterparts.

With respect to India, we through—in addressing biological threats, the Cooperative Threat Reduction Program facilitates a Track 2 biosecurity dialogue. And then through the Cooperative Threat Reduction Program, with respect to nuclear issues, we have a—we support a Track 1.5 dialogue with our Indian counterparts. Dr. Williams is probably in a better position to speak to the details since he has oversight of CTR implementation.

Mr. GALLEGO. Thank you, ma'am.

Dr. Williams, please.

Dr. WILLIAMS. The only thing I would add, sir, is as far as the Republic of Korea goes, to amplify what both Dr. Vann and Ms. Walsh said, we have very close contact with our colleagues both on the R&D [research and development] side of the house as well as in the cooperative threat reduction space, so much so that we recently, last year, just prior to COVID, hosted the Chairman of the Joint Chiefs for the Republic of Korea at DTRA for a full day of discussion in cooperative agreements. And then we routinely have teams going back and forth. And we also have an embedded team, as was said, at U.S. Forces Korea that has constant communication with our allies that are in Korea.

Mr. GALLEGO. Thank you, Dr. Williams.

And, Dr. Vann, how prepared are U.S. Forces in Korea for CWMD situations? And how prepared are South Korean troops? I forget who I was talking to yesterday, like my WMD experience was, you know, on the way to the Syrian border basically getting handed atropine and being told to just put this in my lung in case something goes bad, which is not good.

Dr. VANN. Yes, sir. Yes, not optimal, for sure. So our forces that are currently in Korea—well, first, let me say, what we do to focus our programs is we actually have a service board that sits on—sits with us as we develop RDA,—research, development, and acquisition—capabilities for the joint force structure. We use that service board to help identify capability requirements for the joint force as well as help integrate into the—and across the larger force modernization efforts.

So, in terms of our capabilities for the joint force for chemical and biological defense, we have rapidly developing capabilities we are developing every single day. Last year, we developed over a million pieces of protective and detection equipment for our forces. We have layered defense approaches as well, so that goes from everything from detection, both remote and point, as well as diagnostic gear, physiological monitoring, personal protective equipment, as well as mitigation capabilities for disinfection or decontamination of any of our equipment and personnel.

In addition to that, we are continuing to invest in medical countermeasures for CBRN threats to get ahead of the atropine and to make both vaccination or pretreatments as well as post-exposure therapeutics more easily adaptable to new and emerging threats as well as more effective in its pursuit to mitigate the effects of chemical and biological weapons.

Mr. GALLEGO. Thank you, Dr. Vann.

Admiral, earlier, we were talking about working with our allies. Is there something in our classification process right now that doesn't make it optimal for us to be able to share information with our allies or even across the service in order for us to, basically, be ready for the CWMD threats of the future?

Admiral SZYMANSKI. Chairman, thanks for the question. I think, over the years that SOCOM [Special Operations Command] has had the coordinating authority, we have really tried to break down the barriers to sharing information. I know just in the conferences that we coordinate through the year, we always have whatever NDS [National Defense Strategy] WMD threat challenge that we are examining that year, we try to have the partners, we have a day—it is usually a 2- or 3-day conference—and we usually have a day where our foreign partners are asked to join and participate in the conference.

Now, there always are security classification challenges that we continue to try to overcome. I think a good example is really what we have been doing to help NATO [North Atlantic Treaty Organization] both in their biological and chemical preparedness and response as well as their allied tactical publication that allows for more information sharing.

But information sharing outside of WMD has always been one of those obstacles to collaboration that really needs to be examined in the moment for the problem that you are trying to solve at hand.

Mr. GALLEGO. Okay. Thank you. I yield to Ranking Member Kelly.

Mr. KELLY. Thank you, Mr. Chairman. Thank you to the witnesses for being here.

Mr. GALLEGO. Ranking Member Kelly, I think I went way more than 5 minutes, so please take whatever time you may need.

Mr. KELLY. [Inaudible] talk about the [inaudible].

Mr. GALLEGO. Ranking Member Kelly, one second, is it just my connection, but you are breaking up.

Mr. KELLY. Can you hear me?

VOICE. It is hard to hear Ranking Member Kelly, here in the HASC [House Armed Services Committee] hearing room.

Mr. KELLY. How about now?

Mr. GALLEGO. Yeah. That is better.

Mr. KELLY. All right. As the Department balances the shift in resources between C-VEO [countering violent extremist organizations] with GPC [great power competition], what are the most significant capability or resource vulnerabilities to the countering weapons of mass destruction mission? And I will start with you, Vice Admiral, and then the others can chime in.

Admiral SZYMANSKI. So the resource and challenges, I think, in General Clarke's statement a few weeks back, he talked about the balance between readiness and modernization as we shift to take

on strategic competition. The CWMD problem set, the way we look at the CWMD problem set, it is robust, it is complex, and it is transregional. And there is really—as we think about balance of those resources across all of the threat vectors, from the most—the VEO with the most rudimentary applications or developments of CWMD problem, to the strategic competitors who have advanced capabilities across the biological, chemical, and nuclear threats spectrum.

So, from a SOCOM perspective and from a, I think, from the Department's perspective, we look at the CWMD challenge, but it doesn't really shift across—we have to still look at that challenge across all those threat vectors. So the shift did not really—hasn't really changed the way we attack or go after or try to fight the challenge of the CWMD problem set. Over.

Mr. KELLY. Anyone else want to add?

Ms. WALSH. I would like to join in and add that one of the reasons that the Unity of Effort Council undertook a DOD-wide CWMD prioritization effort was because we recognized this spectrum of threats is crowded and that resources are always going to be more limited than the threats will bear. And so, by prioritizing the greatest WMD threats and associating those with where the Department of Defense has the exclusive mission to counter, so a leading versus a supporting other U.S. Government departments and agencies, it is going to help all of our CWMD stakeholder components focus their investments, activities, and efforts toward those priorities. It does not mean that we are taking our eye off the entirety of the threat spectrum, but it is helping us make smart investments. And one of the things that we continue to look at is where we can get multiple returns on the same investments, whether it is nuclear, chemical, or biological threats that we are countering. Thank you.

Mr. KELLY. Thank you. And I spoke with three of the four of you yesterday, and one of my biggest concerns is that, as we shift to global power or competition, that this is a zero-sum, zero-sum game when we talk about this arena. And it is important that we not only focus on global power, but we also look at violent and home-grown terrorist organizations, which can do us much, much damage.

Second, this is for you, Dr. Williams. We have been tracking the SARS-COVID-2 origins and DOD and DTRA funding to the Wuhan Institute of Virology through its grant to EcoHealth Alliance. I am interested if and how each [inaudible] government agency given its ties to the PLA [People's Liberation Army]?

Dr. WILLIAMS. Chairman, I am afraid you cut for the middle of that question, sir. If you could repeat it, please. Over.

Mr. KELLY. I am talking about the Wuhan Institute of Virology and tracking the SARS-COVID-2, and I am wondering what kind of risk assessment or risk analysis we conducted and how the Wuhan Institute of Virology became the [inaudible] of choice for U.S. Government agencies, given its ties to the PLA.

Dr. WILLIAMS. Sir, thank you for your question. Sir, as we have looked at this extensively, as you know, sir, there was a request from the Congress to the Department a year, 2 years ago to look at this funding level as well as again most recently. We have done

a thorough look at all of our programmatic activities to ensure that at least the Defense Threat Reduction Agency's funding to this NGO [nongovernmental organization] was not provided, to the best of our knowledge, into the Wuhan Institute of Virology.

On top of it, sir, our expertise both on programmatic as well as kind of our technical expertise looks at all of our activities that we invest in for these types of NGOs to make sure that the risk for government funding is minimalized, and in keeping with the traditions and the boundaries of the Federal acquisition process, but, equally as importantly, policy as well. I think, Dr. Vann, did you want to add anything to this?

Dr. VANN. I don't have much to add to that. I think that that is a good, you know, good review. But I would like to add that we also across the NCB did a thorough review to identify any potential access or investment into the Wuhan laboratory, and we have not identified any. It is something that we continue to watch to ensure that our investments are not going to places where they should not be.

Mr. KELLY. Chairman, I am going to ask one last question, but I am going to ask that they submit for the record [inaudible] the hearing.

I just want to ask how confident each of you are with the full appreciation of the chemical and biological capabilities of our adversaries. And if there are gaps, please in writing let us know what we can do to close some of those gaps.

And, with that, Mr. Chairman, I yield back.

[The information referred to was not available at the time of printing.]

Mr. GALLEGO. Thank you.

I now yield time to Representative Larsen.

Mr. LARSEN. Thank you, Mr. Chair. I hope your dog stays off you this time.

So my question is really about legacy, and I might have difficulty asking this because I have legacy thinking myself. So I have to switch my brain a little bit in trying to craft this question. I think it is for Vice Admiral Szymanski and Director Williams.

And given what we know and what you have testified to regarding synthetic biology, regarding 3D printing, advanced manufacturing, these different technologies that both have uses, good and evil, who is in charge in the Department for ensuring that the women and men in our military understand their uses of these technologies and—generally, and then understanding the uses of these technologies in the field? I can think of a—many 3D printing manufacturing, advanced manufacturing plant being deployed with a group of women and men in our military in the field for use for certain purposes. Who is in charge of educating and upscaling these women and men for the uses of these technologies?

Admiral SZYMANSKI. Thank you for the question, Congressman Larsen. So really there is a service requirement and responsibility largely for the force generation and how forces are equipped—manned, equipped, and trained. From a coordinating authority from SOCOM, our responsibility is really about the planning—helping the combatant—geographic combatant commands plan against how to counter WMD. Then, annually, we look and assess

against that plan the changing conditions on the ground, the changing threat vectors, the changing situation, and assess if that campaign plan and that framework is adequate or needs to be adapted.

But I think that the collaboration between what SOCOM does as the coordinating authority and then what DTRA does I think, more importantly to your question, is that DTRA really gets after the unique solution of those gaps that we identify in that plan against those changing conditions.

For instance, we may see a new biological threat. Do we have the diagnostics? And I think Dr. Vann was pretty articulate in her opening statement about the kinds of things that they are doing across the spectrum of being prepared as well as to maintain consequence as well as protective equipment capabilities. But largely the man, train, and equipping aspects for our individuals, for our men and women, are a service responsibility; that is the geographical combatant commander's responsibility for how we incorporate the plan as it relates to the threat in their region.

Mr. LARSEN. So do we have to rely on the service then to generate that requirement if we see it otherwise? If we see that they aren't doing them?

Admiral SZYMANSKI. No, sir. Often we will help generate that requirement for that. In fact, this year is the first year that SOCOM has done a comprehensive—from a coordinating authority lens, has submitted a for—the requirements, broad-based requirements piece for DOD to—and each of the geographical combatant commanders, to DTRA.

Mr. LARSEN. Dr. Williams.

Dr. WILLIAMS. Sir, so as the admiral said, sir, yes, we ingest that requirements from the services as well as from the geographic combatant commanders on a routine basis. We actually get four-star requirements that come in, and we rack and stack those against the available resources, and, again, keeping with policy to make sure it is there. As the admiral just said, I literally sent last night to General Clarke an interim response on that requirements letter that came in earlier this spring.

So what we end up doing is—also as part of our engagement with the services and their man, equip, and train aspect of things, we make sure we bring that cutting-edge technology knowledge back into their training courses. Again, a specific example of that, sir, we actually run the Defense Nuclear Weapons School, which trains all the nuclear aspects of that.

Mr. LARSEN. Dr. Williams, anything more, please for the record.

And I will have questions for Dr. Vann and Ms. Walsh regarding your definition of legacy as well as more on the prioritization efforts of the Unity of Efforts Council. I think we are probably going to be interested in the outcomes of that. So, with that, I will [inaudible] that for the record, Mr. Chair, and I will yield back.

I yield back none of the time I have in the time left.

Mr. GALLEGO. Thank you, Representative Larsen.

Now, we have Representative Scott next.

Mr. SCOTT. Thank you, Mr. Chairman.

And, ladies and gentlemen, thank you for being with us today. The topic kind of really better discussed, I think, behind closed

doors, but I want to encourage my colleagues to get up to speed if you are not on the ABMS [Advanced Battle Management System] system and some of the potential gaps or—or not potential, but the very real gaps that we have in the ability to pick up weapons that could and would be used against the United States if they were, if we were to find ourselves in a conflict with Russia or China. The systems are smaller. They are significantly faster, and that means we have got to pick them up with systems that we use in space.

And I will mention a couple of my concerns with that is that, a few years ago, we were dependent on rockets from Russia to actually launch satellites as the United States. And I am happy to see the private sector to help us launch satellites, but I do think that we need to be self-reliant and not dependent on the public sector to do that. And so that is one thing that I hope that the agency, the Defense Department will continue to look at is making sure that while publicly traded companies are fine to use during times when we are not in conflict, what would happen to our ability to launch if we were dependent on publicly traded companies during an all-out war with Russia and China.

As we talk about ABMS versus the legacy systems, and, Admiral, this is predominantly for you because you have been one of the guys on the ground as a special operator. I am very concerned about the communications aspect of the new systems. And as we move into space, are you confident that we can handle the communications from space and not necessarily from aircraft for our special operators?

Admiral SZYMANSKI. Congressman, thank you for the question. Space and communications, as we think about strategic competition, I think it is a problem set we think about often. You are right, as special operations has historically been dependent on robust tactical communications, and a lot of that is based on space architecture. I would also say you are right that this would be a better discussion in another setting at another time. But let me say this: I think it is important that we run scenarios. In fact, we've just run a scenario down at SOCOM not related to CWMD on a day without comms [communications]. And so how do we plan for everything from our tactical to our strategic comms to take and survive a hit. In good military planning, as you know, we do most likely courses of action scenarios, and we do most dangerous.

And so what do we need to—what are the gaps in things like comm computing, communications at the edge? And so we are kind of going through that analysis now. How resilient and how resilient does that comm infrastructure have to be? Obviously, our communications are—our space communications are important, and I think we are taking a hard look at how we won't be able to fight and win in a contested or denied comm environment.

Mr. SCOTT. Space is going to be contested as well. And I understand their concept. I won't get too much into it. I actually like the concept. But I do want to make sure that, you know, if we did end up in a scenario where we needed to be doing a lot of launches, that we would not be totally dependent on publicly traded companies to do that. And we got ourselves in a bind a couple of years ago where we were dependent on Russian rockets to actually launch our satellites. And I hope that that is something that we

just pay attention to. It is a mistake we made in the past, we don't need to make in the future.

I will mention one last thing for my colleagues on the Democratic side. In the President's speech, he mentioned a DARPA [Defense Advanced Research Projects Agency]-like program in the National Institute of Health. I am not so sure that it would be better served to the general public if we did a National Institute of Health-type program under DARPA so that we did effectively the same thing the President is asking for. But the model and the leadership of DARPA seems to work very well, and I don't see why we can't increase that funding over there with a specific focus on health.

With that, my time is up, as you just heard. And so I appreciate all of you, and I look forward to continuing the discussion.

Mr. GALLEGO. Thank you, Representative Scott, and impressive that you keep your own timer.

Now, let's move on to Representative Keating.

Mr. KEATING. Thank you, Mr. Chairman.

I thank our witnesses. Public reports, including a very recent one over the National Academy of Sciences, have detailed the threats behind directed radio frequency energy weapons, how that can be used. Are you doing any research or involvement in that in terms of the scope of your work—

Ms. WALSH. I'm sorry, I had trouble hearing the question, understanding the question.

Mr. KEATING. I will try again. Public reports including the National Academy of Sciences, have talked about directed radio frequency, microwave [inaudible] weapons that were used. Are you [inaudible] with that subject matter [inaudible] what kind of research methodology do you have in terms of that?

Ms. WALSH. Sir.

Mr. GALLEGO. Were you able to understand that question?

Ms. WALSH. I believe so. Thank you.

Mr. GALLEGO. Okay.

Ms. WALSH. The Department of Defense is aware and supporting a whole-of-government effort looking into those issues. This is another topic that I would be happy to discuss in a different setting.

Mr. KEATING. There are, though, however, national publications done. For instance, the National Academy of Sciences. So can you just comment generally on whether they present a real danger?

Ms. WALSH. What the National Academy of Sciences report assessed is definitely something that we are continuing to look at. It was directed at the request, I believe, of the Department of State. And so we are taking that report and its findings seriously. And it is part of what we are looking into in cooperation with the State Department and other parts of the U.S. Government.

Mr. KEATING. I realize that we probably will have to deal with more of this in a classified setting. But thank you very much.

I yield back, Mr. Chairman.

Mr. GALLEGO. Thank you, Representative Keating.

And I now actually lost track of who is next. Give me one second please.

Representative Bacon, you are up.

Mr. BACON. Thank you, Mr. Chair.

Thank you to all of our panelists. I appreciate your leadership. My first question is to Ms. Vann. Is Iran your number one threat for nuclear proliferation? Thank you.

Dr. VANN. Actually, I think for that conversation, I would defer to my colleague from Policy.

Ms. WALSH. Thank you very much. When it comes to proliferation, we have great concerns about China. China lacks export controls. It is not a country that exercises in great transparency in reporting to international bodies that it has signed up to report to, but also just being good stewards of public information sharing. So we do have concerns about China, the proliferation that could support WMD activities across the board of items coming out of China and China not responsibly monitoring what is going where.

Obviously, we look at any number of proliferation concerns when it comes to nuclear. This could include just fissile material, radiological material. Iran is not my number one proliferation threat. Iran does not have a nuclear weapons program. But there are other nuclear weapons—

Mr. BACON. I think what I was trying to get to is—and I think you answered it—[inaudible] a threat, and Iran is I believe a very likely recipient of that proliferation. So that was the intent of my question.

Framed that way, is that a concern, Iran working with China?

Ms. WALSH. I would want to take that conversation into a classified conversation, sir.

Mr. BACON. So we do know in unclassified documents that China did help out Pakistan. Pakistan helped out North Korea. So I am concerned about what we are potentially seeing with Iran as well.

Just this week, DIA [Defense Intelligence Agency] said that al-Qaida is being safeguarded in Iran in an unclassified report from DIA. Are we concerned about Iran colluding with al-Qaida in other forms of WMD?

Ms. WALSH. Sir, we have great concerns about any number of WMD threat actors, from state-based through non-state actors and violent extremist organizations. We rely on the intelligence community, DIA a leading member of that, to help inform our policy considerations of where are the threats, who has the intent, and where these are colliding.

So, while I can't speak specifically to the DIA report you are referencing, I can say that we are mindful of and watching where there are these alignments of VEOs and state actors of concern.

Mr. BACON. I think it is very concerning to read the DIA report this week. It said al-Qaida's leadership is in Iran, being protected by Iran, and that they are operationally controlling al-Qaida from Iran. That is a concern. I want to go with that.

Maybe one follow-up question for Dr. Williams. It is a little off topic. What is the status of the Open Skies Treaty? The administration has given mixed signals on this. The OC-135 aircraft are being taken to the boneyard, and yet the administration is saying that Open Skies may not be done. Over to you.

Dr. WILLIAMS. Sir, thank you for that question. I would rather defer that one to Ms. Walsh, from a policy perspective, on the future of Open Skies.

Ms. WALSH. Thank you. I think this is one that is under review right now. And so I am not in a position to speak to that, but I would be happy to consult with my colleagues who have the lead for the Open Skies Treaty and circle back with you and your team, sir.

Mr. BACON. Thank you. I will just close by saying if we are taking the aircraft over to the boneyard, it seems to be making a statement there. But then to say that you maybe have not abandoned Open Skies, it is mixed signals. I surely would like to know where we are going with that. So thank you very much, and I yield back.

Mrs. MURPHY [presiding]. Thank you, Mr. Bacon. And Chair Gallego had to step away for a moment, so I am standing in for him. And it just so happens I am next on the list, so I will yield to myself to ask some questions here.

I just want to thank the witnesses. You know, the ODNI [Office of Director of National Intelligence] Annual Threat Assessment has said that China—and you all said it in your opening—that they are undertaking one of the most rapid expansions in platform diversification of its nuclear arsenal in history and has pretty much indicated they are not interested in any arms control agreements.

Also, Ms. Walsh, you just mentioned that it has been difficult to work with them due to lack of transparency and other such things.

While I recognize the conversation about their nuclear arsenal might be better suited for a classified setting, what I do want to ask about is an area where they exhibit some of the exact same behavior—lack of transparency, lack of cooperation—and that is in the area of their fentanyl production.

And I just hosted a panel featuring witnesses from the DEA [Drug Enforcement Agency] and ONDCP [Office of National Drug Control Policy] regarding China's role in America's opioid crisis. They have been sending precursor chemicals to countries like Mexico, where they are made into fentanyl at labs and then mixed with other illicit drugs before they make their way to our homeland, where they kill Americans and are destroying communities all across this country.

And I think the threat assessment also highlights that Mexico will certainly make progress this year producing high-quality fentanyl using these very chemical precursors from China.

So the question is to Ms. Walsh and Dr. Vann, you know, how is the Department modernizing its capabilities to track the production and shipment of such chemical precursors from Asia to the Western Hemisphere?

Ms. WALSH. Thank you very much, Congresswoman. There are any number of communities across DOD that are looking at this issue, just from different perspectives. Our Counternarcotics and Global Threats organization. Even the DOD CWMD-Unity of Effort Council took up the issue of fentanyl, I believe it was 2 years ago now.

And so, across many threads, we are looking at what are the precursors, where are they coming from. We have bilateral conversations, multilateral conversations, to make sure that countries that are the source and origin of these are aware of what is going on underneath their nose, giving them the opportunity and trying to

persuade them to take action to regulate, curtail, be more aware, if not cease entirely what it is doing.

Part of the challenge is that there are very legitimate uses of fentanyl, and so this is the space between the legitimate and then the illicit use with fentanyl. I will defer to Dr. Vann, who is more of an expert on this.

Dr. VANN. Yes. Thank you, ma'am.

Fentanyl, as Ms. Walsh said, is an interesting space because it highlights some of the dual-use nature of and dual-use dilemma that we now face, where we have a legitimate use as well as a potential for nefarious use.

In terms of capability development that we have against things like the fentanyl classes, we have a very robust RDA [research, development, and acquisition] activity to ensure that our joint forces have the right detection equipment to both detect and identify any potential fentanyl in the environment, as well as a diagnostic capability so that you can see when there is a potential human exposure to classes of fentanyls, as well as personal protection equipment, as well as our ability to treat any potential exposure.

So focusing specifically on delivering man-portable medical countermeasures that could be utilized by the force if exposed to those agents.

Mrs. MURPHY. Thank you.

This is to the admiral. You know, it strikes me that when we talk about CWMD or countering violent extremists or countering transnational organizations that deal in sort of the illegal substances, there are a lot of similarities. Sometimes there are state actors nefariously involved. There are networks of people who are moving illegal money, drugs, and other illegal substances.

Are there lessons that can be learned from our decades of working in counterterrorism that can be applied in CWMD or countering narcotics?

Admiral SZYMANSKI. Congresswoman, thanks for that question. Yes, there are absolutely lessons learned from countering violent extremist organizations and the things we have done to build networks to defeat a network.

And I think what you have really just described is the basis of our functional campaign plan, which is about pathway defeat. It is a pathway whether it is—I am sorry, did you have a question?

Mrs. MURPHY. We are just out of time, and just to be mindful of everybody else's time. I am sorry to interrupt you. I would love to get your response through a question for the record, and that is a conversation I would like to continue at a different time.

[The information referred to was not available at the time of printing.]

Mrs. MURPHY. But, with that, I will yield to the next speaker, Mr. Franklin.

Mr. FRANKLIN. Yes. Thank you, Representative Murphy. I am on the road, and I apologize, but I do have some questions. I am just submitting those to the record. But I didn't want to drive and try to ask questions at the same time.

Mrs. MURPHY. Great. Well, travel safely, and we will look forward to your questions for the record.

Next, I have Mr. Larsen.

Mr. LARSEN. Thank you. Are we going back to a second round then, Chair?

Mrs. MURPHY. I think it appears that we must be.

Mr. LARSEN. Okay. All right. Great.

So I will circle back to some ideas for my questions for the record.

But, for Ms. Walsh, can you speak more particularly to the prioritization efforts and the Unity of Effort Council?

What can you share with us about which legacies you are looking at, which are going to survive, which aren't, and, honestly, what new technologies that we need to put more time into which would require us to not put time into other systems?

Ms. WALSH. Our Department priorities started with an intelligence assessment of looking at what are the WMD threats to U.S. interests and the U.S. homeland in particular, where are those threats coming from.

Looking at threat actors, who has the capability, who is trying to get more or different capability, who is modernizing whatever capabilities they already have.

On top of the intelligence analysis, we looked at policy considerations as well. We blended these to assess whether the threat is more than a specific technology; it is about the threat actor because it is the actor who will use any given technology or capability, and that is what we have to counter.

So, while I am not able in this environment to walk you through what those priorities are, we would certainly be happy to have a follow-up conversation with you and share those priorities.

And they differentiate, because it could be that one actor has a— is further along in posing one type of WMD threat than another. And so we do look at these by WMD threat and actor, bring them together, and that is how we have come up with our priority list.

Mr. LARSEN. Can you answer the question in this environment about relative DOD or other agency investment? Is it going to require us to move money around to not spend as much on X to do Y or Z?

Ms. WALSH. Our priority process did not tease out that level of decision. What I will expect is that, as we go through an implementation review this year of looking at how are our components applying these priorities into their particular areas of responsibility, I think that is where we will start to determine if we have more, fewer, or different investments to make. But this is also where we are going to look at, can we get multiple returns on similar or same investments?

Mr. LARSEN. Yeah, yeah. So I have a definition of legacy investments in the DOD, after 20 years in Congress. A legacy investment is something that the DOD doesn't want to do that Congress won't let them get rid of.

So just a heads-up to, you know, maybe bring us along as you run this set of priorities so that we aren't surprised as, you know, oversight folks. That would just be my one little caution on this. I am open to the smart people at the DOD looking at this, obviously. It is just sometimes you run into the buzz saw called Congress because sometimes we don't want to get rid of something or sometimes we are surprised by the result.

So I think it is just important that, especially if it comes down to making not just a priority choice but also then it gets to where does the money go to invest in that priority. I think just a word of advice on that.

And, with that, Chair Murphy, I will yield back. Thank you.

Mrs. MURPHY. Thank you, Mr. Larsen.

And next I yield to Ranking Member Kelly.

Mr. KELLY. Thank you, Chairwoman Murphy.

Just on—given the increased use of chemical weapons in Syria and the [inaudible] use of [inaudible] Russia, what can we do to deter further use of chemical or biological weapons? What are we doing to ensure international norms against the use of these weapons is not eroded, or to develop new standards to deal with the emergent chem and bio threats?

Ms. WALSH. If I don't get to all your question, please circle back. You did break up a little bit in there. But what I think I heard you say is you are interested in knowing what we are doing to help preserve international norms, prevent further erosion of them on the chemical and biological side.

I will say it starts with our own behavior and being a leader through international fora and through bilateral relationships. In response to Russia's 2018 use of a Novichok, the United States, along with likeminded countries, worked through the OPCW [Organization for the Prohibition of Chemical Weapons] to add the Novichoks to the Chemical Weapons Convention schedule, or the list of prohibited items that signatories agree will not be used.

We have continued to speak out when we have seen international norms either eroded or flagrantly violated. We do not want any nation to be able to think that they are going to get away with this. And so diplomacy is our first course of action.

The Department of Defense stands in support of the Department of State. We work hard to maintain bilateral relationships so that other countries are speaking out when they are outraged by Russia and other nations' behavior as well.

We continue to encourage bilateral and multilateral public dialogues about biological agents through biological surveillance, detection, investments that we are making in partner countries. We are helping to build others' capacity to not only be able to detect but also then to diagnose and contain biological outbreaks that are naturally occurring.

We are asking and calling on our partners and likeminded allies to speak out on these issues. COVID has certainly put a premium on that in the last year, that we need to take this seriously. This is not a niche issue, and this is one that can have devastating consequences to security, economic, and just general public health as well.

Mr. KELLY. Very quickly. I asked a question earlier, and I still would like more a in-depth. I think a lot of this is going to be classified, but I would like to follow up.

How confident are we that we have the full appreciation of the chemical and biological capabilities of our adversaries?

Ms. WALSH. At an unclassified level, I can tell you that we do have concerns because of Russia and China's lack of transparency

in meeting its obligations to notify through the Chemical Weapons Convention and the Biological Weapons Convention.

That lack of transparency, behavior we have observed over the last year of intentional misinformation about U.S. capabilities, U.S. investments, and partner nation biological laboratories that are serving public health and public good, but Russia and China continue to put out propaganda that is giving false information about what those facilities are and what our partner nations are doing.

So I do not have trust and confidence that we know everything. They are not living up to their end of the bargain.

Mr. KELLY. Very good. And just very very quickly—I am signing off after this. I want to thank you witnesses again for your testimony here today and for what you do every day to keep this Nation safe. With that, I am signing off.

[Inaudible] status, but I am sure one of my Republican [inaudible].

Mr. GALLEGO [presiding]. Thank you, Representative Kelly.

And then assuming Representative Scott will act as ranking member after you leave. Okay, excellent.

Next we have on my list—thank you for bearing with me. I actually jumped off to attend another hearing. Representative Keating I have next on my list.

Mr. KEATING. For the second round, Mr. Chairman, I will yield back.

Mr. GALLEGO. Excellent. Then after that, we have Representative Scott.

Mr. SCOTT. I don't have any further questions, Mr. Chairman. I just again would love to have the subcommittee come to Robins Air Force Base, look at the ABMS system and, you know, just making sure that we are—again, our dependency on foreign sources for rocket fuel and our dependency on the private sector, I just want to make sure that we work through those issues. And that while we can always count on the private sector in times of peace, you know, what would we do in a time of war with regard to our ability to launch.

With that, I will yield, after thanking the members for their service—the panel for their service.

Mr. GALLEGO. Thank you, Representative Scott.

I have Representative Murphy next, if you have a second round.

Mrs. MURPHY. Thank you, Mr. Chair.

Actually, I would just like to let the admiral finish the answer to the previous question I had regarding the lessons off of CT [counterterrorism] and whether or not we are applying them in this area of counternarcotics as well as counter-WMD.

Admiral SZYMANSKI. Congresswoman Murphy, we absolutely are applying those lessons. I think you are aware that SOCOM is also the coordinating authority for violent extremist organizations. We have been obviously in that fight for almost two decades.

As I was saying, starting to say earlier, you know, all this is really about pathway defeat. And so, when we look at whether it is transnational criminal organizations, violent extremist organizations, other bad actors, all are dependent on certain pathways. And we call those the transregional enablers, so it is things like comms, finances, and those things.

So understanding a network, regardless of what the illicit aspects of what is being transferred, there are absolutely lessons learned from what we have done over the years. And with, you know, great participation of our partners as well as the intelligence community on being able to understand networks, really then try to understand their activities on how they use those transregional enablers and how we get after those enablers to actually prevent and/or counter whatever the illicit cargo is or whatever the high-value leaders that we need to get after.

Mrs. MURPHY. So, as a Member who represents Florida, I am always very concerned with what is going on in Latin America and the Caribbean. And that is an area where there is quite a bit of transnational criminal organization activity.

Are you aware of any traditional WMD threats to the United States from state or non-state actors emanating from Latin America or the Caribbean?

Admiral SZYMANSKI. Ma'am, thank you for the question. I would prefer to take that question for the record and do it in a more classified setting.

[The information referred to was not available at the time of printing.]

Mrs. MURPHY. Great. Thank you. And then final question for you, Admiral. With the U.S. preparing to withdraw its troops from Afghanistan in September of this year, there are a lot of national security risks that are involved with this decision, as we all know. And I know you are working through a lot of those to mitigate and prepare for them.

Can you discuss how you think withdrawal might affect America's counter-WMD efforts in Afghanistan and the neighboring countries, especially if the Taliban gains strength and if Afghanistan once again becomes a haven for terrorist groups that have an interest in using WMD.

How can we and our allies combat this threat without a significant permanent force presence on the ground?

Admiral SZYMANSKI. Congresswoman, again, I would like to take that one for the record.

[The information referred to was not available at the time of printing.]

Admiral SZYMANSKI. But I think there will be a significant partner and allied piece. There is a lot going into right now from the State Department, with diplomacy, with a number of the neighboring countries and the Gulf coalition countries.

There are a couple recent intelligence assessments on after withdrawal, and I would prefer to talk about those in a classified setting. There is a lot of hope for also where the Taliban will be for wanting to be recognized as an international order.

So we understand it is a very uncertain time, and at the moment we are really focused on the safe and deliberate retrograde of all the troops and all the other U.S. and foreign personnel that are currently deployed in Afghanistan.

Mrs. MURPHY. Great. I understand the need to move this conversation to a different classification level and look forward to the opportunity to do that.

Thank you to the witnesses today, and I yield back my time. Thank you, Mr. Chair.

Mr. GALLEGO. Thank you, Vice Chair Murphy.

Now I would like to move to Representative Waltz.

Mr. WALTZ. Thank you, Mr. Chairman.

And I would just like to associate myself with Representative Murphy's remarks and questions. Particularly in the wake of the withdrawal, I think one of the things that is being lost in the conversation is that even if all of our best hopes bear out and the Taliban has had a change of heart and decides to be a responsible international actor, no one has been able to explain to me to date, including General Miller, what capability they have to enforce any agreement against al-Qaida and half the world's terrorist organizations, you know, what capability do they have that 300,000 Afghan Army soldiers and 40 Western nations have struggled to do over the last 40 years?

But along those lines—so I would certainly welcome if she would have me if we have a follow-on classified brief, I would certainly love to participate in that.

My question is, operationally, when it comes to IEDs [improvised explosive devices], Dr. Williams, DTRA I think has done a great job over the years of training our Afghan partners, our partners in the Afghan Army, on counter-IED detection and defeat.

My understanding is those trainers and those assets are being withdrawn. What leave-behind capability through the Afghan Security Forces Fund—whether it is IED detection kits, nitrate kits—what leave-behind capability are we providing the Afghan Security Forces through your programs?

And I understand there is a State Department—I cosigned a letter for the State Department through its program to also provide funding so that we don't have to go back, which I sadly fear that we are going to have to do, but to bolster the Afghan Security Force's ability to deal with IEDs, which, by the statistics I am seeing, account for 75 percent of the casualties.

Dr. WILLIAMS. Sir, thank you for your question. One point of clarification. As you know, sir, the former counter-IED activities that were done through the Defense Threat Reduction Agency are actually transitioning at the end of this fiscal year into the Army for continuing use for that.

In terms of your question about leave-behind, sir, as the admiral said, I think I would like to prefer to take that in a classified setting so we can have a little more fulsome discussion on that, sir.

Mr. WALTZ. Okay. I will just say I hope that we are not taking that for the record because there is not really a plan yet. I know that I am sure you are working on it. And I struggle to understand why it is classified if we are handing it over to the Afghans. But that is fine. We will take that to a different setting.

The other piece that I would like to talk to that I would imagine would be a setting is I know there are a number of classified programs dealing with Pakistan's nuclear program and assuring the security of those assets. So that I would like to request in a classified setting, and the status of those programs with no presence in Afghanistan.

And then, finally, again, probably also classified—so, Mr. Chairman, my questions will be pretty brief—but I am incredibly concerned and have asked this question in the past: If we move to any type of conflict on the Korean Peninsula, I understand there are a number of programs with SOCOM, DTRA, and others, to secure North Korea's nuclear assets.

My concern is what type of deconfliction, if any, that we have with China, who would obviously also want to assure that those assets are secured. So that would be I guess then three requests for you in a classified setting.

And, Mr. Chair, if I could just—one more before I close. I am still not clear when we have that why a leave-behind capability with the Afghans so that they can detect IEDs, I am not sure why that would be classified. I mean, that should be, I think [inaudible]—

Mr. GALLEGO. Would that be possible? Can you repeat yourself?

Mr. WALTZ [continuing]. And so that we can assure everyone that they have that capability. But I will just take that for the record and I yield. Thank you, Chairman.

[The information referred to was not available at the time of printing.]

Mr. GALLEGO. Thank you, Representative Waltz.

And I believe it is my turn now. Yes, it is. Okay, great.

The Department of Defense recently, in 2017, transferred the countering weapons of mass destruction mission lead from U.S. Strategic Command to U.S. Special Operations Command, signaling a shift in strategy that places greater emphasis on identifying and preventing threats before they metastasize into a crisis.

In addition, the Department of Homeland Security established a CWMD office, consolidating numerous offices and functions across the Department.

How does coordination work at the national level to ensure that CWMD activity, authority, policy, planning, and expertise are operating cohesively, effectively, and efficiently? And what progress has SOCOM made to develop the infrastructure, partnerships, expertise, strategy and tactics needed to address this mission successfully? Let's start with the admiral.

Admiral SZYMANSKI. Chairman, thank you for the question.

So, for the years that SOCOM has had the function—or, excuse me, the coordinating authority for CWMD, really the basis of the whole effort is built on functional campaign plan and helping the combatant commanders with their campaign plans, the geographical combatant commanders, as I kind of mentioned in one of the opening questions, with the threat vectors and the threat actors in their regions, and how we put that plan together in coordination with the geographical combatant commander, how we assess that plan against the changes to the threat, against the changes to the actors as well as the environment, and then make recommendations on any material gaps, training deficiencies, et cetera.

But what we do in the meantime back here in [Washington] DC or in CONUS [continental United States] is we hold a couple seminars a year, called our coordination seminars or senior leader seminars. We bring together a number of folks from partners and allies to interagency to many members, largely from the Unity of Effort

Council across Joint Staff and DOD, and look at a very specific problem.

And then we try to bring in a whole-of-government approach to how we might answer that, identify not only the gaps in the Department's, the Department of Defense's capabilities but also potentially think more use of what Department of Energy, Department of State, Department of Commerce could apply to that problem set.

But from a SOCOM coordinating authority, that is really planning and assessing and recommending. I think I would defer to Ms. Walsh on the Unity of Effort Council and how they use the existing processes to pull the other things that you talked about at the beginning of your question.

Ms. WALSH. Thank you very much, Admiral.

Mr. GALLEGO. Thank you.

Ms. Walsh.

Ms. WALSH. The Unity of Effort Council was created after we recognized that we had a lot of cooks in the kitchen, but we weren't working off of the same recipe. And so, through the Unity of Effort Council, we have convened 20 different stakeholder organizations across the Office of the Secretary of Defense, various Joint Staff components, all of the services, SOCOM is our coordinating authority, and then all of our combatant commands so that we can raise awareness among these components of what their roles and missions are, what issues that have been stuck or are emerging, and where we need to work together to make sure that these issues can rise to the surface so that senior leaders are aware of threats, opportunities, capabilities we have but also areas where we need to develop further capabilities or make different investments.

And over the course of the last several years, I would argue that we have built not just awareness, but we have built connective tissue that didn't exist previously. And so now we are—we have a phrase of consolidated buying power of the CWMD community and DOD is yielding benefits.

Our plans, our strategy documents, our resource requirements, our understanding of threats, our understanding of where we can have cross-pollination but also our understanding that some components don't necessarily sit in all of the meetings where resource decisions are made or requirements are decided or prioritized and then where the strategy documents are.

So, through the Unity of Effort Council, we have taken both a bottom-up but also a top-down approach in identifying what are those issues that do not get resolved in other existing DOD fora. And through this, we have given rise to a community that is now speaking—that is understanding more but is also speaking with more one voice.

We expect that we will continue to see dividends from the Unity of Effort Council as the Department goes through the strategic review and guidance development efforts this year, whether it is the Global Posture Review, the next National Defense Strategy, and then any number of other reviews that the Department is conducting. I am confident that our Unity of Effort Council members will be able to bring WMD issues more into the forefront. Thank you.

Mr. GALLEGO. Thank you, Ms. Walsh.

And just a general statement. You know, I feel like, across the Federal Government, there is really good unity and conversations happening about countering WMD measures. I worry when it needs to come across down to your local police and State government.

One of the things I think we saw from 9/11 was that, you know, as much as the Federal Government is important, it is also your local government that is important, in terms of prevention and deterrence and even, unfortunately, maybe sometimes reaction. So I just want to kind of remind that we keep that in mind going into the future.

I have on my list for second question if he wants it Representative Waltz.

Is there anybody else that has another question they want to— Representative Scott, do you have any? Ranking Member, anybody from your side?

Okay, great. Excellent.

Well, thank you so much for your time to all of our presenters. You know, I did note that there were a lot of things that were said that we are going to have to give for the record or in a classified setting. Please make sure to follow up with our staff to actually, you know, fulfill that. I think there are a lot of things that we want to follow up, and there is no need for us to leave things hanging up in the air.

Thank you for your time, and I hope to see you all soon.

[Whereupon, at 12:31 p.m., the subcommittee was adjourned.]

A P P E N D I X

MAY 4, 2021

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 4, 2021

Opening Statement, Chairman Ruben Gallego
Subcommittee on Intelligence and Special Operations
Countering Weapons of Mass Destruction Posture Hearing
May 04, 2021 – 11:00 AM – WebEx

Good morning.

Today we will be hearing testimony regarding the current and projected state of the defense apparatus to counter weapons of mass destruction. The witnesses represent the Department of Defense's extensive infrastructure necessary to comprehensively plan for, track, and mitigate the growing threats which comprise weapons of mass destruction.

Even with recent demonstrations by authoritarian regimes to deploy biological and chemical weapons against their own citizens, the threat of WMD is often understood as a high-yield, nuclear nation killers. However, emerging biotechnologies and illicit narcotics could be weaponized and present existential threats to the country. Synthetic biology increases opportunity for less-sophisticated adversaries to create chemical and biological weapons without requiring the funding, infrastructure, or materiel historically necessary. Further, the 2021 Annual Threat Assessment provided by the Director of National Intelligence highlights the growing threat from the development of chemical precursors to produce illicit narcotics such as fentanyl, which has already devastated segments of the US population.

The COVID-19 pandemic has shown just how devastating biological threats can be. In this case, the novel coronavirus was not weaponized. But it could be. I am interested in hearing what are we doing to affirmatively detect and deter these amorphous threats.

These threats are exacerbated by the rapid proliferation of accessible technologies -- which are often easily accessible or commercially-available, creating an omnipresent threat that must be considered strategically while preparing to confront the threats tactically.

With that, let me introduce our four witnesses who are responsible for the modernization of the Department's CWMD strategy, policies, and programs to reflect today's threat environment with the capability needs of tomorrow. We look forward to hearing their testimonies regarding this critical topic:

- The Honorable Jennifer Walsh, Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security;
- The Honorable Brandi C. Vann, Acting Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs;
- Vice Admiral Timothy G. Szymanski, Deputy Commander, U.S. Special Operations Command; and
- Dr. Rhys M. Williams, Acting Director, Defense Threat Reduction Agency.

Ladies, gentlemen, thank you. I look forward to the discussion and will now recognize Ranking Member Kelly for his opening remarks.

**Statement of Ranking Member Trent Kelly
Subcommittee on Intelligence and Special Operations Hearing
“Reviewing Department of Defense Strategy, Policy, and Programs for
Countering Weapons of Mass Destruction for Fiscal Year 2022”**

Mr. Chairman, thank you for the opening remarks and your leadership in organizing this morning’s posture hearing. Today we will hear from four experts across the countering weapons of mass destruction portfolio.

There is a lot going on from the usual bad actors of China, Russia, Iran, Syria, North Korea, and various terrorist organizations that I look forward to hearing about during this session. The continued use of chemical weapons by the Assad Regime, poisoning of Alexey Navalny and Sergey Skripal by Russia, and research of biological weapons by China are just a few highlights of this threat.

A growing concern, brought to the forefront from the ongoing Coronavirus pandemic, is the threat of chemical and biological weapons directed at our military and private citizens. The risk of weaponized aerosol fentanyl is just one example of many alarming and growing threats. I am interested to hear from our witnesses today on what we are doing to not only identify these types of threats but also what we are doing to mitigate the threats both for our deployed troops and our citizens here in the homeland.

I am also interested to hear our witnesses’ views on the global threat posture, especially in the context of great power competition and potential for kinetic engagement with adversaries like China.

Lastly, I am deeply concerned about how the Biden Administration’s budget will affect our overall Counter Weapons of Mass Destruction (WMD) preparedness. The ongoing use of chemical threats, coupled with the effects seen from the Coronavirus, illuminate the direness of this, and failing to properly invest in these resources will have grave consequences.

I want to thank our witnesses in advance for their time today. I look forward to continuing to work with our Counter WMD experts during the 117th Congress to ensure we are appropriately postured to meet and defeat the threats shaped by weapons of mass destruction.

Mr. Chairman, I yield back.

STATEMENT OF

MS. JENNIFER WALSH

ACTING ASSISTANT SECRETARY OF DEFENSE FOR HOMELAND DEFENSE AND
GLOBAL SECURITY

BEFORE THE HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

MAY 4, 2021

INTRODUCTION

Chairman Gallego, Ranking Member Kelly, and Members of the Subcommittee, I appreciate the opportunity to testify regarding the Department of Defense's (DoD) efforts related to countering weapons of mass destruction (CWMD). DoD's CWMD mission is to dissuade, deter, and, when necessary, defeat actors of concern who threaten or use WMD against the United States and our interests. To accomplish this mission, the DoD CWMD Enterprise maintains the capability and capacity to prepare for, respond to, and mitigate the effects of WMD use, while supporting broader whole-of-government efforts to prevent adversaries from acquiring or proliferating WMD. This mission requires the Department to invest in the chemical, biological, radiological, and nuclear (CBRN) defense readiness of the Joint Force, to execute cooperative threat reduction programs, and to support U.S. and international efforts to prevent WMD proliferation. I work alongside Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense, Dr. Brandi Vann; Acting Director of the Defense Threat Reduction Agency, Dr. Rhys Williams; Deputy Commander of the U.S. Special Operations Command, Vice Admiral Timothy Szymanski; and other DoD, U.S. Government, and international counterparts in developing the policies, strategies, capabilities, and expertise needed to deter and defeat WMD threats.

The WMD threat landscape continues to evolve and we continue to adapt how the Department is addressing those threats. Threats to international norms against WMD use, particularly in the chemical weapons arena, is a concerning trend. In recent years, both Russia and North Korea have employed chemical weapons for assassinations. Syria has used chemical weapons multiple times against its own population. As a result, the Organization for the Prohibition of Chemical Weapons (OPCW) Conference of the States Parties adopted a decision on April 21, 2021 condemning Syria's use of chemical weapons and suspending Syria's rights and privileges under the Chemical Weapons Convention (CWC). China, Russia, North Korea, and Iran, as well as select Violent Extremist Organizations (VEOs), all possess or are working to advance weapons of mass destruction-related capabilities. The COVID-19 pandemic continues to demonstrate the threat posed by biological incidents. And scientific advances in biotechnology are creating new types of challenges while also lowering the barriers to entry for WMD development, proliferation, and use. The dynamic nature of the WMD threat means that

the Department must continue adapting to mitigate threats to U.S. interests, building on what we have learned from experience.

THREAT ENVIRONMENT

Secretary Austin's initial message to the Force made clear that China is the Department's pacing challenge. China is in the midst of a substantial modernization of its nuclear arsenal and delivery systems. While maintaining a robust silo-based and road-mobile ground-based nuclear force, China also possesses ballistic missile submarines and a bomber that can carry an air-launched ballistic missile that may be nuclear capable. The Intelligence Community estimates that the Chinese nuclear arsenal will at least double from its current estimated size of 200 warheads as China modernizes. Additionally, given China's military-civil fusion strategy, the U.S. Government has long-standing concerns that China seeks to acquire U.S. and other globally-sourced equipment, components, and technologies to advance its nuclear and other strategic military programs under the auspices of civilian or dual-use acquisition. Chinese entities and individuals continue to transfer proliferation-sensitive materials to North Korea, Iran, and other threat actors, and China has demonstrated lax enforcement of domestic export controls and multilateral sanctions regimes intended to prevent such transfers. Separately, China is a State Party to the CWC and the Biological Weapons Convention (BWC). According to the Department of State's most recent annual Compliance Report, though, China "engaged in activities with potential dual-use applications, which raise concerns regarding its compliance with Article I of the BWC. In addition, the United States does not have sufficient information to determine whether China eliminated its assessed biological warfare (BW) program, as required under Article II of the Convention." Another Department of State report on the CWC notes for the first time that the United States "cannot certify that China has met its obligations under the Convention due to concerns regarding China's R&D on pharmaceutical-based agents and toxins."

Likewise, Russia continues to expand its WMD capabilities. Russia is devoting substantial resources to its nuclear triad, and its development of new, destabilizing delivery systems – including a nuclear powered cruise missile, autonomous underwater vehicle, and

hypersonic glide vehicle – continues apace. Russia has demonstrated flagrant disregard for international norms against chemical weapons use. The Russian Government has twice used nontraditional nerve agents in failed assassination attempts against Sergei Skripal (2018 in the United Kingdom) and Aleksey Navalny (2020 in Russia). Russia also continues to prop up the Assad regime, despite Syrian forces having used chemical weapons against its citizens on at least 50 occasions. Finally, we continue to have concerns about Russian pharmaceutical-based agent (PBA) programs and their intended purposes.

North Korea's continued pursuit of nuclear, chemical, and biological weapons jeopardizes international stability and weakens the global nonproliferation regime. These capabilities pose a threat to U.S. forces, allies, and partners and violate multiple United Nations Security Council resolutions (UNSCRs). Given the risk that Kim Jong Un could seek to employ WMD in the course of or to stave off a conflict on the Korean Peninsula, the Joint Force must be ready for any number of WMD-related contingencies that require operating in a CBRN contaminated environment. DoD works with our South Korean ally to increase and improve decontamination capabilities in support of an improved CBRN deterrence posture on the Korean Peninsula. These efforts focus on maintaining the capability to decontaminate and operate air and seaports that support reception, staging, onward movement, and integration of forces in the event of a contingency. As the threat from North Korea's WMD programs persists and grows, the Department will continue to work with international partners to deter and delay North Korea's WMD ambitions.

The United States remains committed to preventing Iran from acquiring a nuclear weapon. The Department of Defense plays a supporting role in the United States' Iran strategy by focusing on deterring and defending against Iranian military threats, while the Department of State leads diplomatic efforts to bring Iran's nuclear program back into compliance with limits under the Joint Comprehensive Plan of Action (JCPOA). We are concerned about Iran's efforts to pursue an expansion in its uranium enrichment capabilities, including the installation of multiple cascades of advanced centrifuge models and recent announcements that Iran is enriching uranium up to 60 percent. Iran has also stated that it has conducted work on other capabilities of concern, such as [the production of] uranium metal. The Intelligence Community continues to assess that Iran is not currently undertaking the key nuclear weapons-development

activities that it assesses would be necessary to produce a nuclear device. Iran also possesses and employs the largest inventory of ballistic missiles in the region. The United States has concerns that Iran is developing agents intended to incapacitate for offensive purposes.

Violent Extremist Organizations (VEOs) have pursued WMD with varying degrees of success. The availability of dual-use chemical and radiological material that can be used to make crude WMD is a particular concern. Given safe harbor and access to knowledge, skills, and materials, VEOs still pose a threat to the United States, partners and allies, and U.S. interests.

The threats outlined above represent enduring features of the threat landscape that the United States faces. At the same time, other emerging dynamics portend the possibility of more complex threats in the future. Two bear particular mention:

First, advances in biotechnology provide both promise and peril in the realm of bio-threats. A confluence of advances in biological science, computing, automation, and artificial intelligence / machine learning is fueling a new wave of innovation poised to transform the globe, with the potential for significant applications in defense and national security as well as benefits to the health and welfare of individuals globally. Biotechnologies like gene-editing and synthetic biology may provide the tools to develop more precise therapeutics more quickly and cheaply in the near future. Additive manufacturing may reduce the need for costly and difficult-to-procure equipment necessary to produce those advanced therapeutics. The advent of these advances, however, brings with them the potential for misuse. Rather than develop therapeutics, threat actors may develop more potent and novel biological agents. The greater availability of gene editing, synthetic biology, and additive manufacturing may allow those actors to conduct research and development on a smaller and more difficult-to-detect scale. Many of these technologies are becoming more available to the general public. And the dual-use nature of many of these advancements makes their use for nefarious purposes difficult to identify. As a leading developer of biotechnology and its myriad applications, the United States is often the source of breakthroughs and revolutionary technologies in this space. As such, the United States must also work to protect and secure the U.S. bioeconomy, both to maintain U.S. leadership in this rapidly evolving field and to minimize the risk that U.S.-developed technologies or information will be diverted and misused.

Second, although not a weaponized biological agent, COVID-19 changed the biological threat landscape. The global pandemic demonstrates the breadth and depth of harm infectious disease can exact, exposes the difficulty of combating pandemics, and makes clear the risks our nation would face if State and non-State actors' develop or deploy biological agents to pursue their objectives. The pandemic also shows that biological threats do not respect borders or treaties. Although the total damage from COVID-19 on humans, economic systems, and global infrastructure will not be known for some time, we should have no doubt that other actors have taken note of the effects it has had on the United States and its allies and partners.

THE DEPARTMENT'S RESPONSE TO WMD CHALLENGES

The Department's CWMD professionals are working every day to dissuade, deter, and defeat these threats while maintaining the ability to respond to and mitigate the effects of WMD use. The Department has three lines of effort that support that mission: prevent acquisition, contain and reduce threats, and respond to crises. Achieving effects across those lines of effort is a Department-wide effort. In addition to OSD(Policy), the Offices of the Under Secretaries of Defense for Research and Engineering, for Acquisition and Sustainment, for Personnel and Readiness, and for Intelligence and Security, as well as the Joint Staff, the Military Departments and Services, the Combatant Commands (particularly U.S. Special Operations Command (USSOCOM) in its role as Coordinating Authority), and the Defense Agencies (including the Defense Threat Reduction Agency), work collaboratively to meet CWMD challenges.

Under the lines of effort focused on preventing acquisition or containing existing threats, the Department plays several important roles, from implementing global nonproliferation and nuclear arms control agreements and arrangements, to supporting whole-of-government efforts to prevent the transfer of WMD material to threat actors of concern. More specifically, DoD contributes to efforts to support and advance the objectives of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) that has now been in force for more than 50 years; remains postured to conduct WMD interdictions; and leverages tools such as the Proliferation Security Initiative so that partners are prepared and willing to interdict illicit WMD-related transfers. The Department also stays abreast of potential future WMD threats, such as security

dynamics that may lead countries to consider pursuing nuclear weapons capabilities, and works with our interagency and international partners to prevent future proliferation.

Additionally, the Department leads the Cooperative Threat Reduction (CTR) Program, which works with partner nations to secure and eliminate WMD and WMD-related materials. Now entering its thirtieth year, the DoD CTR Program originally worked with the states of the former Soviet Union to secure and eliminate vulnerable WMD stockpiles and delivery vehicles. The DoD CTR Program has adapted to the changing WMD threat landscape and is active in more than 30 States worldwide, working with partners to reduce the risk of WMD proliferation and use across the CBRN spectrum. More recently, support from the DoD CTR Program helped a number of countries to more rapidly identify and respond to the COVID-19 pandemic, while also building regional networks to share outbreak data and best practices for COVID-19 diagnosis and reporting. The Department's successes achieved through the CTR Program are a result of the continuing partnership and support of Congress.

The Department also works to develop the capability and capacity of the Joint Force, allies, and partners to operate in a CBRN-contaminated environment. This includes developing the right plans, policies, authorities, and capabilities to protect U.S. forces in a contaminated environment. This is important not only for responding to CBRN crises, but also for deterrence: signaling to adversaries that using WMD against U.S. forces will not help them achieve their objectives. This approach works in tandem with our prevention efforts, particularly by shaping adversary motivation and intent to acquire WMD. To this end, the Department works with European and Asian allies and partners to ensure that U.S. CBRN defense capabilities are interoperable and to encourage them to share the burden of CBRN defense through their own development of robust capabilities. We also invest Security Cooperation funds to help allies and close partners build CBRN defense capabilities necessary to operate alongside U.S. forces. These efforts send a signal to threat actors that aggression using WMD will fail.

To address these issues, the DoD CWMD Enterprise collaborates and de-conflicts at multiple levels, including through the DoD CWMD-Unity of Effort (UoE) Council. The Council brings together the 20-plus stakeholders across the Department to share information and collaborate on cross-cutting issues to meet CWMD policy and strategic goals. Through this Council, we are tackling some of the Department's most challenging CWMD issues, such as

addressing CBRN readiness, and are advancing initiatives to make our Enterprise more effective and efficient. For example, in 2020 the Council finalized a classified document, approved by the Acting Secretary in January 2021, that creates for the first time Department-wide, tiered CWMD priorities. These priorities are designed to align our CWMD resources and efforts around the highest priority WMD threats to the nation and to the Joint Force. In 2021, we are conducting an implementation review to hold the Enterprise accountable to these priorities and to assess alignment with this guidance.

The Administration is reviewing existing, and developing new, national and departmental strategy guidance and issue-specific reviews. Those new strategies and reviews are underway and will set the course for our operations, activities, and investments for the next several years. DoD's CWMD community will have opportunities to inform those reviews and documents; I anticipate that the CWMD community's priorities will include a number of significant initiatives:

As the Department moves out of an ongoing, immediate focus on COVID-19 response, we must confront the bigger question of how the Department should be postured to mitigate the spectrum of biological threats, including natural, accidental, and deliberate. COVID-19 has made clear we cannot view biological weapons and biological incidents as firewalled, since either could have significant consequences for the nation. The Department has played a pivotal role in the current COVID-19 response – a contribution in support of our domestic agencies that has saved American lives. We cannot forget, however, the challenges that we face across the WMD-threat spectrum. In some of those cases, DoD's role is unique within the U.S. Government, and we must make sure we are focused properly on these issues where the President and the nation may depend exclusively—or in a supporting role—on our capabilities.

The Department must also provide the CWMD enterprise with clear guidance and direction, including by making sure CWMD issues are reflected in the Department's updated strategic guidance documents. The Interim National Security Strategic Guidance notes the profound danger that the proliferation of WMD poses for global security. The Department is working to translate that guidance into a new National Defense Strategy, from which we will derive more specific guidance for the CWMD community.

Additionally, the Department must improve readiness for chemical and biological weapons challenges in key theaters. As the Department shifts to an increased focus on competition among great powers, developing the capabilities necessary for us to fight and win in a CBRN-contested environment in those theaters becomes critical. Our adversaries are building WMD capabilities designed to make it more difficult for us to operate in such environments. Ultimately, the Department works to train and equip U.S. forward deployed forces to fight in these scenarios and to achieve interoperability with our allies and partners. The Department is prioritizing the improvement of CBRN defense capabilities, personnel, and equipment in the U.S. European Command Area of Responsibility and on the Korean Peninsula. As we build CBRN defense readiness, we will also work to ensure that the NATO Alliance's deterrence and defense posture is CBRN-informed.

CONCLUSION

Chairman Gallego, Ranking Member Kelly, and Members of the Subcommittee, thank you for the opportunity to testify today regarding the Department of Defense's efforts related to the CWMD Enterprise. The dedicated team at the Department of Defense has made important strides in mitigating WMD threats. However, much work remains and the threat landscape is changing. We are adapting the Joint Force to be better postured against future threats and assisting partners and allies to do the same. We have prioritized WMD threat actors to focus our efforts to prevent and contain WMD threats. And we are evolving to meet the challenge of the future. We will need your continued support for the programs and efforts that the Department has underway to confront these threats. Thank you for your continued commitment to and support of the CWMD mission.

Jennifer C. Walsh
Performing the Duties of Deputy Under Secretary for Policy

Jennifer Walsh began Performing the Duties of the Under Secretary of Defense on January 20, 2021.

Jennifer Walsh serves as the Principal Deputy Assistant Secretary of Defense for Homeland Defense and Global Security in the Office of the Under Secretary of Defense for Policy. Immediately prior, she served as the Principal Director, Countering Weapons of Mass Destruction.

Ms. Walsh entered federal government service in 1996 in the Office of the Secretary of Defense (OSD). She was appointed to the Senior Executive Service in 2010. Her OSD Policy experience includes assignments in the offices for Middle East Policy, Afghanistan/Pakistan/Central Asia, Russia/Ukraine/Eurasia, Plans, Support to Public Diplomacy, Strategy, European Policy, Asia-Pacific Policy, Technology Security Policy & Counter-Proliferation, and the Defense Technology Security Administration (DTSA).

Prior to joining the Department of Defense, Ms. Walsh served as J. William Fulbright Scholar to Sweden and worked as a policy analyst for the Southern Governors' Association in Washington, D.C.

Ms. Walsh is a 2007 graduate of the National War College (NWC) at the National Defense University and served as the OSD Policy Chair on the NWC Faculty from July 2014-June 2017. She earned a Master of Public Affairs degree from the LBJ School of Public Affairs at The University of Texas at Austin and a Bachelor of Arts degree from the Louisiana Scholars' College at Northwestern State University.

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

STATEMENT OF
DR. BRANDI C. VANN

ACTING ASSISTANT SECRETARY OF DEFENSE
FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS

TESTIMONY BEFORE THE
U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON ARMED SERVICES
INTELLIGENCE AND SPECIAL OPERATIONS SUBCOMMITTEE

May 4, 2021

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

INTRODUCTION

Chairman Gallego, Ranking Member Kelly, and distinguished Members of the Subcommittee, it is an honor and privilege to testify before you today on behalf of the men and women of the Department of Defense (DoD) who comprise the United States' formidable counter weapons of mass destruction (CWMD) enterprise. These dedicated Americans work tirelessly to defend our brave service members, the Nation, and our international partners and allies from the increasing threat posed by the most devastating weapons ever created.

As the Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense (ASD(NCB)), I serve as the senior advisor and technical expert to the Secretary and Deputy Secretary of Defense for nuclear energy, nuclear weapons, and chemical and biological defense. In close coordination with the offices of my fellow witnesses, NCB coordinates with interagency and international partners to ensure the United States maintains its enduring technical advantages when countering WMDs. The Office of Nuclear, Chemical, and Biological (NCB) Defense Programs is responsible for ensuring the Department maintains the readiness and resilience to counter WMD across the emerging threat landscape. We perform vital functions in support of the warfighter and strategic leaders such as advising the Secretary on nuclear weapons and forensics, defense nuclear energy, the research, development, and acquisition of chemical and biological defensive capabilities, and ensuring effective implementation and compliance with international arms control treaties. The NCB's distinguished staff support the United States' national security posture, readiness, and deterrence so no potential adversary doubts our overwhelming capability to defend when necessary.

Amid this new technological revolution, the United States must continue modernizing our defensive capabilities and reinvest in the Department's scientific and technological edge. We must capitalize on the knowledge, creativity, and ingenuity of the nuclear, chemical, and biological defense community to research new and emerging capabilities. We must also continue to streamline the process for developing, testing, acquiring, and deploying emerging technologies to the warfighter. My office has prioritized the collaboration between the private sector, industry, and academia with the NCB enterprise at all levels. We are partnering with those driving innovation to move at the speed of relevance while remaining a smart and disciplined investor. Because of the strong partnership the NCB office has with Office of the Under Secretary of Defense for Policy,

the Defense Threat Reduction Agency, and U.S. Special Operations Command; the Department stands poised to achieve our CWMD objectives, and I thank them for their dedication to this mission. Finally, I will continue to work with the Committee, interagency, intra-agency, international, industry, and academia partners to keep the CWMD enterprise synchronized, effective, and innovative.

THREAT ENVIRONMENT

Today, we face unprecedented WMD threats. China, Russia, Iran, North Korea, and violent extremist organizations continue to quietly develop their WMD capabilities to acquire asymmetric and non-traditional means to gain a decisive advantage against the United States and our allies and partners. In particular, chemical and biological threats are expanding at an exponentially accelerated pace due to the convergence of multiple sciences and rapid technological developments. This threat evolves rapidly and continues to pose a destabilizing effect across the entire spectrum of warfare. In addition to the growing complexity of the threat space, we have seen multiple instances of state and non-state actor use of chemical weapons against political opponents and civilian populations over the last several years causing the erosion of the very international regimes put in place to check them. The United States will continue to lead by the power of example through our treaty obligations against the development and use of WMD. However, we must also continue to develop the capabilities to deter and defeat state and non-state adversaries who seek to employ such weapons both below the level of armed conflict and on the battlefield.

Each state adversary identified in President Biden's 2021 Interim National Security Strategic Guidance is presently developing sophisticated and novel capabilities seeking to destabilize and weaken the United States and our alliances. Russia, North Korea, Syria, and violent extremist organizations have recently used chemical weapons to achieve political and military gains. These and other actors have concluded the use of chemical or biological weapons remain a viable tool to prevent escalation, evade accountability, or to gain advantages during tactical operations. China continues to grow, modernize, and diversify its WMD capabilities. China's concerns over the survivability of its government is driving Beijing to invest in new offensive weapons while maintaining the highest readiness levels. Similarly, Russia continues to modernize and diversify its extensive list of capabilities to project power and assert its international strength. Russia depends heavily on non-conventional weapons and capabilities to compete with NATO. Russia

will continue to explore emerging technologies, or novel approaches with existing technologies, to shape the entire spectrum of modern and future conflict. Today, we do not believe Iran has decided to pursue a nuclear weapon, but Iran's nuclear ambitions remain an unresolved concern. The regime continues to expand its nuclear fuel cycle capabilities and has decreased implementation of vital monitoring and verification measures. At the same time, North Korea has taken aggressive and destabilizing actions to acquire or develop new offensive capabilities. These weapons will remain a persistent threat to the United States and our allies. Adapting to the rapidly changing threat environment requires the Department to align our efforts and resources through relevant, effective, innovative, agile, and unified ventures.

COVID-19

As the United States and the world continue to battle the coronavirus disease 2019 (COVID-19) pandemic, the Department remains well-postured to support the needs of our interagency partners as well as state, territory, and tribal community officials. My office has been a critical part of the Department's support to the Federal pandemic response efforts by supporting the development, acquisition, and implementation of critical medical and non-medical capabilities, personnel, supplies, and scalable research and production teams across the country. Further, my office has leveraged the vast acquisition and contracting experience of the Department to expedite vaccination research, and procurement. The U.S. Government leveraged existing chemical and biological defense program research, development, and manufacturing expertise and capabilities for the rapid development of countermeasures against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent for the COVID-19 pandemic.

However, the COVID-19 pandemic illuminated where the United States remains vulnerable to the next biological threat. Naturally occurring, accidental, or intentional biological events can have equally devastating impacts across the entire world. The previously developed capabilities, ongoing research, and subject matter expertise within the CWMD enterprise have proved to be an incredible asset when responding to unprecedented challenges and threats. As we continue to evaluate the lessons learned, the COVID-19 pandemic has demonstrated the United States cannot counter WMD threats alone. Our international partners have leveraged capabilities initially provided through the DoD Cooperative Threat Reduction (CTR) Program to detect and report COVID-19 in their countries, including Thailand, which in January 2020 was the first country

outside China to detect and report COVID-19. DoD continues to encourage partner nations to leverage capabilities previously provided by DoD CTR as part of their domestic COVID-19 preparedness efforts.

NCB ALIGNMENT TO NATIONAL STRATEGY

As directed by the President's Interim National Security Strategic Guidance and the Secretary's Three Priorities, the NCB office is aligning ourselves appropriately to meet their intent and we are working to be in a posture to support when and as necessary; therefore, we are conducting the following lines of effort: Address Advanced and Emerging Threats, Deliver at Speed, Innovate to Modernize, and Synchronize to Optimize. Because WMD threats are rapidly evolving, contested domains are increasing, and barriers to technology are quickly decreasing, the NCB office will innovate at a speed and scale to meet and deter the emerging unprecedented threat. The NCB enterprise requires a clear-eyed assessment to allow the unprecedented integration and transformation we need to defend against future threats. These efforts will enable us to close today's gaps, rapidly mitigate vulnerabilities, anticipate emerging threats, and strengthen domestic and international partnerships.

1 – ADDRESS ADVANCED AND EMERGING THREATS

The Department must understand the emerging threats against the United States and our allies. In order to accomplish this undertaking, the NCB enterprise will remain concept-driven, threat-informed, and development-focused. This requires the Department to enhance coordination across all levels and institutionalize continuous assessments to better inform plans and requirements. By further integrating our offices with the warfighter, we will better understand operational needs and meet the requirements set by services and combatant commands. To appropriately understand and defend against the future threat, we will leverage the strong relationship we have with the Intelligence Community to ensure the NCB enterprise supports the warfighter and stays ahead of the threat. Together, we will drive a broader and more holistic understanding of the current and future threat landscape to achieve agile threat characterization, rapid detection capabilities, and robust horizon-scanning programs. We must carefully synchronize the NCB requirements across the CWMD enterprise to ensure the Joint Force is prepared for threats of today as well as those of tomorrow.

2 - DELIVER AT SPEED

The NCB enterprise demands flexible and agile acquisition capabilities as we refocus attention to the future threat. We are incorporating new partners, streamlining rapid and iterative approaches to research and development, and employing a competitive and business-like mindset. We must invest and maximize the uses of academia and industry to deliver warfighting capabilities at the speed of relevance. The NCB enterprise must identify, manage, and accept risk early in the research, development and acquisition (RDA) pipeline to enable emerging technology concept exploration, rapid prototyping, and adaptive contracting mechanisms. We will adhere to strict intellectual property protections, integrate commercial innovations, and leverage business and market intelligence to guide future RDA opportunities.

3 – INNOVATE TO MODERNIZE

President Biden and Secretary Austin have directed the Department to closely work with Congress as we shift emphasis from legacy systems to cutting-edge technologies and capabilities. We will not only embrace the technological revolution, but we will lead it with game changing advancements to ensure our warfighters are provided with the most cutting-edge technologies. We will radically change how we solve these challenging problem sets by increasing integration of converging science disciplines. The Department will cultivate this collaborative and mutually supportive relationship to drive the critical innovation required to deliver necessary capabilities to the Joint Force. We will expand this collaboration with industry, academia, and international partners to spur innovation, deepen interoperability, and leverage best practices. We will conduct a full review across the NCB enterprise, to right-size and maintain synchronized research and development programs. This operational focus, coupled with a business-like mindset, will allow the NCB enterprise to accelerate the exploitation of ideas that radically enable the warfighter's lethality against WMD. These collaborations will yield breakthroughs to disruptive technologies that eliminate the vulnerabilities of our Joint Force.

4 – SYNCHRONIZE TO OPTIMIZE

The NCB enterprise requires a collaborative business-like mindset to lead the technological revolution. Therefore, we must maintain a focus on solid stewardship and aggressively seek cost-effective and synchronized programs to deter the rapidly-evolving threat. The NCB enterprise will

use data-driven decision-making processes with fiscal discipline that still allows for innovation and cultivation of a talented workforce. We are committed to developing, nurturing, and advancing the NCB enterprise's human capital talent and expertise to shape the future of emerging technologies and ensure the United States maintains its enduring technological advantages. Through the incredible coalition of interagency, international, industry, and academia partners, our NCB enterprise effectively coordinates on investments and collaborates to address future needs of the warfighter, leadership, and the Nation by staying ahead of the threat.

Across the NCB enterprise, we have passionately embraced these lines of effort to deter the full spectrum of WMD threats facing the United States. These efforts directly support President Biden's directive to restore the United States' leadership through a holistic strategic engagement toolkit. The Department will ensure the Joint Force is equipped to deter potential adversaries and defend the nation.

ROLE OF THE NCB OFFICE IN CWMD

The NCB enterprise is at a critical moment. The decisions we make today will shape the future of our counter WMD abilities for decades to come. The use of chemical weapons against civilians in the UK, Malaysia, and Russia, as well as the COVID-19 pandemic, have all demonstrated the challenges the United States faces in maintaining effective response capabilities, thus exemplifying the need for new defensive programs as well as strong, enforceable arms control and treaty measures. Any operational impact to the Joint Force, from either naturally occurring or manmade threats, require robust preparedness and a rapid response to ensure the United States is able to operate in any contested environment. Similarly, as adversaries continue to advance and invest in their growing nuclear capabilities, the United States must sustain and modernize a safe, secure, credible, and effective nuclear deterrent. Today, we are close to losing our competitive edge.

Ensuring a Secure, Sustainable, and Effective Nuclear Deterrent

In close partnership with the Department of Energy's National Nuclear Security Administration (NNSA), we continue to update and overhaul our nuclear deterrent. Following the Cold War, the United States reprioritized or paused most nuclear weapon acquisition programs which has caused current warheads, delivery systems, and infrastructure to far exceed their original service lives.

The Department and NNSA are collaboratively addressing these long standing challenges to ensure America's nuclear deterrent remains effective. Core to this partnership between the Department and NNSA is the congressionally established coordination body of the Nuclear Weapons Council (NWC). During monthly stakeholder meetings, we align the vision, strategy, investment, and execution of nuclear programs. This important work supports a responsive and resilient nuclear security enterprise to meet U.S. deterrence and assurance requirements. DoD and NNSA continue our close synchronization across the NCB enterprise as we begin coordination on President Biden's U.S. Nuclear Posture Review in conjunction with the broader DoD strategic review. While this work has only just begun, the NCB office is committed to this effective interagency looking forward to meaningful involvement in this review process.

Furthermore, the NCB office provides oversight to the Department's National Technical Nuclear Forensics (NTNF) capabilities and ensure they remain integrated into national-level response efforts against the use of nuclear or radiological materials within the United States or our interests abroad. The United States, through sustained collaboration across multiple Departments and Agencies, has collectively made significant improvements to our NTNF capabilities over the last decade, but additional work remains. This pillar of partnership across the CWMD enterprise will allow the Department and our interagency partners to modernize our NTNF capabilities and to ensure the United States is able to respond to nuclear incidents and attribute any use to an adversary. The Department supports an expanded role for NNSA as we look to the future of NTNF.

Disrupting Proliferation Networks

Within the NCB office, the CWMD Systems portfolio enhances warfighter lethality by developing capabilities to exploit and defeat critical nodes of nuclear, chemical, and biological and their associated proliferation networks. We leverage science and technology investments made by the Department of Defense, other Federal agencies, and industry to rapidly deliver new and modernized CWMD capabilities to the warfighter. These investments result in capabilities fielded to the Joint Force, enabling it to reduce WMD threats and create options for the United States to prevent WMD use.

Arms Control Posture

In addition to disrupting proliferation attempts, the NCB office oversees and manages the Department's treaty implementation activities to ensure compliance with materials control agreements, the Chemical Weapons Convention (CWC), the Biological and Toxin Weapons Convention (BWC), and other multilateral treaties and agreements. These treaties and agreements serve as a backbone for international norms against the use of WMD, and have provided a forum for international dialogue. U.S. leadership in the international community is supported by our commitment to arms control measures. The analysis and engagement of the NCB office was critical to the continuity of inspections at our chemical demilitarization sites in Kentucky and Colorado throughout the COVID pandemic: the only instances in the world where continuous arms control verification was sustained. Another example of our leadership can be found in our efforts to provide interagency and international partners with the technical information necessary to add new chemical agents to the CWC schedule of chemicals following the Skripal poisoning. Our work ensured the updated schedules are rooted in science while reducing the risk of proliferation of sensitive information. Furthermore, my office closely monitors defensive biological research conducted by the Department to ensure the defense activities remain compliant with international norms and treaty obligations.

Chemical Weapon Elimination

While ensuring the United States remains compliant with international treaties, norms, and standards, we continue to execute incredible programs that keep Americans safe. The Chemical Demilitarization Program eliminates U.S. chemical weapon stockpiles as well as recovered chemical warfare materials and former production facilities while ensuring maximum protection to the workforce, the public, and the environment. Our commitment to the Chemical Weapons Convention demonstrates United States leadership in eliminating chemical weapons. The program continues diligent progress towards complete destruction of the U.S. chemical weapons stockpiles at Pueblo Chemical Depot and Blue Grass Army Depot with thousands of munitions already destroyed. Using the critical funding authorized by this Committee, we have been able to continue the safe destruction of the chemical weapons stockpile to meet the congressionally mandated destruction deadline of December 31, 2023. We thank the Committee for their continued partnership in this program.

Despite the great strides the United States and other states parties to the Chemical Weapons Convention have made in eliminating an entire class of WMD from their national stockpiles, the norms against the development and use of chemical weapons have eroded and the threats these weapons pose to warfighters and civilians have increased. In support of requirements defined in DoD strategy and guidance as well as by our user communities, NCB actively engages DoD, interagency, industry, academia, and international partners to improve and maintain readiness and operational flexibility to destroy chemical weapons. We seek to improve our ability to expeditiously destroy such weapons whenever and wherever they are found to reduce risk to the warfighter and prevent them from presenting a burden or obstacle to maneuver forces. Specifically, we are actively collaborating and cost-sharing with our UK counterparts to identify, test and evaluate technologies to disable and destroy chemical warfare material in austere environments, including on the battlefield. We are also engaging our counterparts within the South Korean and Japanese Ministries of Defense to identify ways we can support their chemical weapons destruction needs through research and development as well as capacity building.

Expanding Chemical and Biological Defense

The COVID-19 pandemic has demonstrated challenges with United States pandemic preparedness and response capabilities. While the United States is not alone in having learned many lessons from the past year, we must identify and address the core issues as a matter of urgency. In my view, we must be postured to understand, protect against, and swiftly mitigate any operational impact to the Joint Force from naturally occurring or manmade threats. This ensures that our warfighters remain operational and lethal across all domains in any contested environment, and are also prepared to defend the homeland or support domestic agencies if called upon.

The Department's chemical and biological defense capabilities remain a key component of an integrated national effort to counter WMD and address traditional and emerging threats. The traditional mission of the Chemical and Biological Defense Program office remains unchanged: provide the warfighters with capabilities to fight through and win in chemically and biologically contaminated environments. Yet, today's technology and science is revealing the ability to weaponize biology and chemistry in ways that were purely theoretical only years ago. The proliferation of knowledge and technology, difficulty in detecting illicit activities, development of emerging threats, improved delivery capabilities, and our limited ability to anticipate how

adversaries might employ WMD heighten the risk of attacks against the U.S. and our allies. It is critical the Department can respond to all types of biological threat. We welcome the Committee's interest in clarifying DoD roles and responsibilities for biodefense and pandemic preparedness as expressed in the Joint Explanatory Statement accompanying the FY2021 National Defense Authorization Act, to holistically analyze the CWMD enterprise to ensure we are right sized and prepared for the future threat.

As noted in the 2021 Interim National Security Strategic Guidance, the acceleration of science and technology "poses both peril and promise." These changes create opportunities for the NCB enterprise to leverage innovation and integrate the collective knowledge to rapidly field adaptive solutions to mitigate threats. This reality mandates the Department think creatively when developing new strategies and methodologies, shift priorities to address the emergence of new and complex threats, and to transform the enterprise with a business-like mindset.

It bears repeating, recent real world uses of chemical agents are chilling as they have become all too common and more frequent. In 2002, we observed the use of a pharmaceutical based agent (PBA) by Russian security services at the Dobrovka Theater, thereby showcasing the potency and danger of these agents and the possibility of them becoming new threats that must be taken "off the table" in a systematic and targeted manner. In 2017, we observed North Korea orchestrate the assassination of Kim Jong Nam at the Kuala Lumpur International Airport in Malaysia, demonstrating the willingness of authoritarian states to use asymmetric techniques to achieve political objectives. Just since last year's testimony we have witnessed Russia deploy a Novichok agent against opposition figure Alexei Navalny, the second use of this class of chemical weapons agent in just over two years following the attempted Russian assassination of Sergei and Yulia Skripal.

We will constantly seek to move ahead of the threat by anticipating and understanding the convergence of novel science and technology advances as contextualized by feasibility and risk. A layered defense will deny the effects of WMD by developing a wide range of defensive equipment including protective material, sensors, and medical countermeasures. The Department is focused on detection and identification of next-generation threat agents, while also improving the protection, mitigation, diagnostic, and therapeutic capabilities of our CWMD enterprise.

As guided by the Secretary's three priorities, my office has begun to leverage emerging manufacturing technologies to build better defensive capabilities, while identifying and addressing the potential exploitation of these same technologies by our adversaries. Through this process, we are adapting to the new threat while revitalizing and expanding the government's capabilities to reduce the risk of future chemical and biological incidents. As emerging technologies like artificial intelligence, synthetic biology, nanotechnology, and convergent sciences revolutionize the threat landscape, our defensive posture must be equally accelerated and advanced.

The Department's previous investments in defensive capabilities against potential threats enabled us to rapidly identify and support advanced development of vaccine and therapeutic candidates to fight COVID-19. Interagency public health partners leveraged the early investments my office made in Remdesivir as a therapeutic for Ebola to evaluate this broad-spectrum antiviral agent against COVID-19. The Defense Health Program worked closely with the Department of Defense Medical Countermeasures Advanced Development and Manufacturing Facility in Alachua, Florida, to support a novel platform for developing DNA-based vaccines for studies on effectiveness against respiratory viruses. The NCB office partnered with local and federal health officials to leverage the Department's investment in wearable technology for physiological monitoring of healthcare workers.

Strengthen Alliances

Just as we continue to lead the international community in our commitment to arms control measures, we continue to work with 35 like-minded partner nations to reduce WMD threats against the United States and our shared interests. The DoD CTR Program works with partner nations to secure, eliminate, and prevent the proliferation of WMD related materials, technologies, expertise, as well as the associated delivery systems and infrastructure, and to detect and interdict WMD-related trafficking or outbreaks of especially dangerous pathogens. In close partnership with Ms. Walsh and her team, NCB issues the implementation guidance and provides programmatic oversight of this incredibly successful program. Since 2004, the DoD CTR Program has countered biological threats by improving partner nations' ability to detect, diagnose, and report unusual biological incidents and outbreaks of pandemic potential. The DoD CTR Program continues to support recipients of CTR assistance so that they are able to use their disease surveillance capabilities to quickly identify and report biological threats. Moving forward, the CTR program

will continue to work with our international partners so that they are able to sustain and utilize the capabilities provided to them.

The Department will continue to prioritize engagement with like-minded partners so that defensive measures are responsive and able to close the gaps and vulnerabilities in the international system. Through the Cooperative Threat Reduction Program, International Counterproliferation Program, Proliferation Security Initiative, and the Chemical, Biological, Radiological, and Nuclear (CBRN) Preparedness Program, the Department helps build the capacity and will of partners to secure WMD materials, detect and interdict proliferation, and respond to CBRN events. Collaboration yields insights derived from a variety of perspectives and opportunities to share the cost of research and development, and the chance to improve the interoperability of systems and processes. The NCB office maintains multiple bilateral and multilateral relationships to improve our collective readiness to eliminate foreign nuclear, chemical, and biological weapons. This cooperation has resulted in intelligence and information sharing, identification of mutual gaps in capabilities, and shared investment to develop solutions to address them. Collectively, these efforts are aimed at stopping WMD threats at the source, keeping these threats farther from our citizens and armed forces.

CONCLUSION

The NCB enterprise remains focused on anticipating the future threat, closing capability gaps, and working to ensure the Joint Force prevails in a contaminated environment by integrating and synchronizing efforts to systematically, prevent, mitigate, and neutralize WMD threats. We will continue to pivot our focus to disrupt our adversaries' attempts to gain an advantage by developing agile solutions with broad applications to include future biological incidents like the COVID-19 pandemic. We must continue to address advanced and emerging threats, deliver at speed, innovate to modernize, and synchronize to optimize. By expanding our interagency and international partnerships, we will keep the CWMD enterprise relevant, effective, innovative, agile, and unified. I look forward to expanding the partnership between my office and the Committee to address the significant challenges our enterprise faces. On behalf of the NCB enterprise, I would like to thank the Committee for its support and long-standing commitment to improving our capabilities to address current and emerging threats. I look forward to continuing this close and productive partnership in the years ahead.

Dr. Brandi C. Vann, PhD
Acting Assistant Secretary of Defense for Nuclear, Chemical, and
Biological Defense Programs (ASD(NCB))

Dr. Brandi C. Vann currently serves as the Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (Acting ASD (NCB)). In this capacity, she is the principal advisor to the Secretary, Deputy Secretary and Under Secretary of Defense for Acquisition and Sustainment (A&S) on nuclear energy, nuclear weapons and chemical biological defense.

Prior to her acting role she was the Deputy Assistant Secretary of Defense for Chemical and Biological Defense Programs (DASD (CBD)) where she conducted Department-level research, development, and acquisition (RDA) activities from concept and requirements development, through early science and technology, to advanced development, testing and evaluation, and procurement. These efforts focus on reducing risk from emerging threats and fielding sustainable capabilities to all Services in accordance with Department, Service, and Combatant Command priorities for chemical, biological, and radiological (CBR) defense (CBRD) and ensure our warfighters can fight and win in chemical, biological, radiological, and nuclear (CBRN) contested environments.

Previously, Dr. Vann worked for the Defense Threat Reduction Agency (DTRA) where she served as the Chief of Advanced and Emerging Threats. At DTRA, she led the assessment of future chemical and biological (CB) combat threats to aid in the prioritization of capability investments to provide protection, situational awareness and recovery to the future force, as well as inform the creation of CB Doctrine and Concepts of Operations. During her tenure she also led the development of medical countermeasures, environmental detection and medical diagnostic systems. She has received numerous commendations for her work including the Office of the Director of National Intelligence Meritorious Achievement Award for her management of an innovative program to detect contaminated battlefields.

Prior to her joining the Department of Defense, Dr. Vann served as the Director of Laboratories for Nephron Pharmaceuticals Corporation (NPC). While there, she was responsible for the start-up of new state-of-the-art facility for the manufacturing of generic respiratory therapies and sterile pre-filled medications for hospitals and medical facilities. In this role, she was responsible for the build of laboratory infrastructure and the regulatory clearance to commence full operational capability.

Dr. Vann was a visiting scientist at the Counterterrorism and Forensic Science Research Unit at the Federal Bureau of Investigation (FBI). While at the FBI, Dr. Vann provided research expertise in forensic toxicology and trace analysis in support of the FBI Laboratory Division mission to include development of novel methodologies for chemical and biological agent

Dr. Vann received her PhD in Chemistry from the University of South Carolina where she studied analytical chemistry and applied statistics. She also held a Senior Executive Fellowship from the Kennedy School at Harvard University.

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COMMITTEE

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 SPECIAL OPERATIONS

Date May 04, 2021

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COMMITTEE

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Chairman Gallego, Ranking Member Kelly, 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 Ms. Jennifer Walsh, Dr. Brandi C. Vann, and Dr. Rhys M. Williams 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 across the Department of Defense (DoD) for countering weapons of mass destruction (CWMD). We applaud their leadership, depth and breadth of innovation, and competence. We are proud to work together with them across the Department and interagency, and with our foreign allies and partners to counter threats from nuclear, biological, and chemical weapons. In my statement today I will review USSOCOM's role and approach, provide an update on weapons of mass destruction (WMD) threats, and summarize our work to counter them over the past year.

DoD CWMD Role

The 2017 Unified Command Plan directed USSOCOM to coordinate the CWMD mission across the Department, and General Clarke has sustained that strategic course. The 2020 Unified Command Plan reiterates USSOCOM's responsibility for planning of the Department's CWMD efforts and integrating Department plans and intelligence priorities in support of the Combatant Commands, Department priorities, and other U.S. Government agencies as directed by the Secretary. Working within national and Departmental policy guidance, and through USSOCOM's J10 directorate, based both here in the National Capital Region and at USSOCOM Headquarters in Tampa, we conduct strategic planning, assess the Department's execution of the CWMD campaign, and make recommendations to the Chairman of the Joint Chiefs of Staff and the Secretary of Defense. USSOCOM has served in this role for nearly four years and we sustain

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a DoD-wide functional campaign plan (FCP) that enables the Joint Force to improve coordination in countering transregional WMD threats. The FCP supports National Security priorities and directs planning to achieve CWMD objectives.

Along the same lines, we work with Combatant Commands to integrate CWMD tasks and objectives into campaign and contingency planning, scheduled exercises, and operations, activities, and investments (OAIs). We also incorporate key concepts from our FCP into DoD CWMD military doctrine. By integrating key concepts into plans and doctrine, and campaign objectives into OAIs, we synchronize the Department across military time horizons from strategy to current operations while also conducting the annual CWMD Assessment. As we continue to focus on these priorities, we will continue to assess CWMD gaps across the Joint Force, and develop recommendations to improve planning, coordination, training and capabilities to counter WMD.

WMD Landscape

The landscape of nuclear, chemical, and biological threats has continued to evolve over the past year. We monitor and analyze progression of existing and over the horizon WMD programs closely, with essential support from the Defense Intelligence Agency. The classification level of this forum limits the detail I can provide from our vantage point, but news headlines are a good indicator of the complexity and nature of the threat. The COVID-19 pandemic likely affected nearly every adversary's WMD program, although these impacts will be difficult to quantify in the near term. The pandemic caused extensive delays in the shipping industry, which likely degraded global procurement activities.

China's continued implementation of conventional nuclear integration (CNI), i.e. placing nuclear capable weapons within conventional forces, remains a concern. Beijing continues

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modernization and expansion of its nuclear arsenal, focusing on diversified nuclear delivery and establishing a robust nuclear triad capable of surviving a first strike. China is flight testing and deploying several hypersonic glide vehicles (HGV), which can support nuclear or conventional munitions and are designed for high-speed maneuvers at altitudes where they pose challenges to U.S. missile defenses. China also sustained possible dual-use biological research, some of which raises concerns regarding its compliance with Article I of the Biological and Toxins Weapons Convention (BWC).

Russia continues to increase its nuclear stockpile, with an emphasis on nonstrategic nuclear weapons and, like China, is implementing CNI and testing HGV. As detailed in the 2021 State Department Compliance Report, the United States has found that Russia is in violation of its commitments to both the Biological and Toxins Weapons Convention (BWC) and Chemical Weapons Convention (CWC) obligations. As we all have seen in recent years, Russia attempted to assassinate a former Russian intelligence officer with a Novichok nerve agent in the United Kingdom in 2018, and more recently attempted to assassinate Russian opposition leader Aleksey Navalny with another Novichok nerve agent in August 2020.

The Intelligence Community continues to assess that Iran is not currently undertaking the key nuclear-weapons development activities that would be necessary to produce a nuclear device. However, Iran continues to reduce its commitments under the Joint Comprehensive Plan of Action (JCPOA), including expanding its uranium enrichment program and threatening to reduce critical IAEA monitoring. Iran also continues to develop and flight test its space launch vehicles (SLVs) including boosters that could be capable of achieving ICBM ranges if configured for that purpose.

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North Korea retains nuclear and biological weapon capabilities as well as a likely chemical warfare program. North Korea almost certainly continued to acquire foreign-sourced goods for its nuclear and ballistic missile programs, as well as other dual-use items that could support chemical and biological weapons production and research. Although military hostilities in South Asia abated in 2020, the regional rivalry between India and Pakistan continued to simmer with both nuclear powers lofting reciprocal accusations.

Regarding Violent Extremist Organizations (VEOs), the U.S. and our Coalition partners have clearly had success against both ISIS and al-Qaida, attriting key leaders, preventing external attacks against the U.S. homeland, and disrupting chemical warfare aspirations; the Islamic State was the first non-state actor to have developed a chemical warfare agent and combine it with a projectile delivery system. While we necessarily realign our forces and resources as required to compete against multiple threats simultaneously, VEOs will remain an enduring threat and will continue to exploit widely available industrial chemicals for rudimentary chemical attacks in Iraq and Syria, while remaining intent on developing WMD capabilities and inspiring WMD-related attacks against Western interests. Moreover, VEOs offer potential instructions, documents and videos on the internet to enable the use of crude toxins and improvised chemical weapons by their supporters as well as lone actors. We need to maintain sustainable pressure against VEO groups that present a current or emerging threat to the U.S., while better aligning a Whole of Government and Whole of Coalition approach so our efforts are more complementary to host nation counterterrorism (CT) activities, providing assistance when required.

Interagency and International Coordination

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Clearly, no single agency or government can address any of these threats alone. WMD pose complex transregional challenges that demand the application of specialized expertise and authorities across our government as well as our foreign allies and partners. The Department of Defense, plays a unique and critical supporting role to our interagency colleagues, especially at the departments of Energy, State, Treasury, and Commerce, as well as our law enforcement entities, to prevent and contain threats, even as we prepare to respond to WMD crises in coordination with some of the same interagency colleagues. We coordinate, therefore, not only across the Department of Defense but also with interagency colleagues and foreign allies and partners, without whom achieving U.S. objectives would be exceedingly difficult.

USSOCOM supports and collaborates with interagency partners on a range of CWMD activities aligned against top U.S. national security challenges. We have implemented transregionally focused operational planning teams, which have enhanced shared understanding of WMD proliferation and procurement channels employed by adversaries and ensured deconfliction between the DoD and other USG agencies and departments while enabling OAs.

Further, exercising CWMD scenarios with interagency partners ensures senior leaders are informed about the range of possible strategic outcomes and perceptions of other state and non-state actors given potential or actual provocations, and the most effective U.S. responses. We are working closely with the Joint Staff, Combatant Commands, and interagency partners, such as the Departments of Homeland Security, Energy and the Federal Bureau of Investigation on CWMD exercise scenarios to enhance the U.S. and partners' responses to these threats. We look to advance our engagements with relevant academia, national laboratories, think tanks, and others to understand alternative points of view, promote innovation, and enhance the disruption of WMD proliferation networks. As we improve perceptions of strategic risk and associated

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mitigations, we can evaluate non-DoD contributions to counter the threat that may enhance our whole of government responses in heretofore unrealized ways.

We benefit from the Defense Counterproliferation Office's analytic and tradecraft proficiency, partner with DTRA for its technical expertise, and maintain liaison officers at ODNI's National Counterproliferation Center and OUSD (I&S) to ensure close collaboration. At the Joint Staff's invitation, we are leading the effort to develop an unclassified CWMD handbook for distribution to allies and foreign partners as part of the Multinational Capability Development Campaign. The handbook focuses on the transregional nature of the WMD threat, draws critical elements from our FCP and Joint CWMD doctrine, and incorporates our partners' inputs from France, Germany, Norway, Sweden, and NATO staff to support CWMD planning, training, capability development. Last November, USSOCOM became a party to the Memorandum of Understanding (MOU) for Management of the U.S. participation in the NATO Joint Chemical, Biological, Radiological, and Nuclear Defence Capability Development Group (JCBRND-CDG) in order to improve collaboration between members, establish U.S. priorities for NATO's CWMD capability development, and shape NATO's new CWMD doctrine.

Assessments and Recommendations

We work closely with the Joint Staff, Combatant Commands, and Services to regularly assess the Department's CWMD campaign and ensure the Department's plans appropriately address changes in the WMD threat environment. We strive to improve our methodology and ensure it provides timely, reliable, relevant, and actionable information to support senior Department decision making. Our aim is to better support senior leaders charged with employing the Joint Force today, developing and preparing it for tomorrow, and helping to design a military that is ready to fight and win against both current and future WMD threats.

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We incorporated impacts from the COVID-19 pandemic to inform future risk calculus. As we ensure the Joint Force sustains adequate personnel protection and support capabilities, we intend to integrate COVID-19 lessons learned into Joint Operating Concepts that define requirements for CBRN defense.

As we finalize our 2020 comprehensive CWMD assessment, we are focused on improving chemical, biological, radiological, and nuclear defense training and materiel readiness and implementing insights from recent U.S. Forces Korea and U.S. European Command CWMD-focused reviews to ensure the Joint Force can operate in a contaminated environment. U.S. European Command identified several doctrinal, organizational, and personnel challenges among key findings of its own CWMD assessment, and we are working with their leadership to enhance their capabilities. These findings were a primary focus of our September 2020 CWMD Coordination Conference and proposed recommendations for improvement resulting from our February 2021 Senior Leader Seminar that included enhancing joint force readiness, interagency integration, and leveraging partner nation CWMD capacity in countering threats.

2021 Priorities and Conclusion

Our priorities for this and the upcoming fiscal year include improving joint force readiness, which serves as a deterrent to counter evolving WMD threats; producing actionable CWMD assessments; and making timely recommendations to inform senior leader risk calculus. We will collaborate with the Combatant Commands, the Joint Staff and other government agencies to further analyze Joint Force CWMD capabilities and make recommendations for improvement where appropriate. We will also ensure the Department's plans address evolving over the horizon, chemical, biological, and 4th generation agent threats. We will continue to accelerate information sharing through close coordination with the intelligence community.

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Finally, we will continue to work with combatant commands in the planning and execution of globally integrated operations and exercises designed to deter actors with existing capabilities from using them and deny emerging threats the means to produce or acquire WMD.

In closing, General Clarke and I would like to thank the members of this subcommittee for their support of this important national security mission. It is a privilege to work together with our colleagues to keep our country safe from the threat of nuclear, chemical, and biological threats. We 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.

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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.

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HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

DR. RHYS WILLIAMS
ACTING DIRECTOR
DEFENSE THREAT REDUCTION AGENCY

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

MAY 4, 2021

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE

Chairman Gallego, Ranking Member Kelly, and distinguished members of the subcommittee, thank you for your continued support of the Defense Threat Reduction Agency (DTRA). On behalf of the nearly 2200 men and women – military and civilians – of DTRA, I am proud to appear today alongside Ms. Jennifer Walsh, Performing the Duties of the Deputy Under Secretary of Defense for Policy; Dr. Brandi Vann, Acting Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; and Vice Admiral Tim Szymanski, Deputy Commander, United States Special Operations Command, to speak about DTRA's unique role in countering Weapons of Mass Destruction (WMD) and emerging threats.

The Department of Defense (DoD) established DTRA to integrate and focus expertise and capabilities against the real and ever-evolving threat of the proliferation and use of WMD and emerging threats. Under National and Departmental policy and guidance, through close collaboration with our partners across the DoD, U.S. Government (USG) interagency, academia, industry and international partners, we reduce the dangers posed by WMD and emerging threats by delivering innovative capabilities that ensure a strong, protected, and prepared Joint Force.

DTRA is a unique organization within the DoD. We are both a Defense Agency and a Combat Support Agency, employing a highly skilled workforce that blends world-class technical expertise with the on the ground operational knowledge of uniformed service members. At home and abroad, we deliver mission success by **detecting**, **detering**, and **defeating** WMD and emerging threats.

In our Defense Agency role, we respond to requirements from the Services, and a variety of DoD offices, including but not limited to: the Under Secretaries of Defense (USD) for Acquisition & Sustainment, Policy, and Research & Engineering. These requirements support key priorities to include building partner capacity, cooperative threat reduction, and treaty support. In our Combat Support Agency role, DTRA responds to Combatant Command (CCMD) and Joint Staff requirements. As such, we leverage our capabilities and expertise directly in support of Countering Weapons of Mass Destruction (CWMD) planning and operations. Our unique position as both a Defense Agency and a Combat Support Agency therefore enables us to integrate efforts across the CWMD mission space.

Given our mission, I cannot overstate that people are our most precious resource. Our staff includes world-class scientists developing therapeutics for emerging pathogens and chemical threat agents; technical linguists providing DoD with unique capabilities to interact with adversaries and partners;

tactical specialists securing dangerous weapons and materials; subject matter experts on call 24/7 to provide real-time expertise to all levels of government; and logisticians, contracting officers, security experts, and IT personnel who are the backbone of the Agency. DTRA's military personnel are fundamental to ensure DTRA remains closely aligned with warfighter requirements and provide the Joint Force with specialized expertise. Our capabilities are amplified by our forward deployed presence – we have personnel embedded with the CCMDs, task forces, and interagency to provide direct and tailored support to counter WMD and emerging threats.

A crucial mission for DTRA is to support implementation of U.S. policies for international CWMD cooperative programs to improve the capability and capacity of partner nations to detect, deter, and defeat WMD and emerging threats. Through these partnerships, we build biosurveillance networks; work collaboratively on nonproliferation; strengthen interdiction activities; secure vulnerable chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) materials; develop CWMD tools and capabilities, and prepare partner nations to respond to future WMD crises. Our partnerships are not only focused outside our borders. DTRA personnel collaborate closely with the interagency and enable federal, state, and local governments to identify, prevent, prepare for, and respond to WMD incidents.

Responding to COVID-19

In March of 2020 DTRA transitioned to a maximum telework status due to the COVID-19 pandemic. I am proud to say that the Agency maintained our core functions and 24/7 support to ongoing operations and programs. Since the transition our research and development (R&D) programs continued critical test and evaluation activities (with COVID safety protocols in place); subject matter experts continued to provide on-call modeling and reachback support, including weekly epidemiological modeling supporting CCMD operations in over 90 nations. DTRA personnel continued to escort international inspectors conducting on-site verification of U.S. chemical weapons destruction, and DTRA Technical Support Groups continue to train Special Operations Forces (SOF) for CWMD Missions. Our workforce has proven its tenacity over the past 14 months, continuing to provide tangible value despite challenges of travel and videoconferencing (at all classification levels) while managing the complexity of home life with spouses, children, and extended family at home.

Our deep technical expertise in emerging biological threats enabled DTRA to provide specialized capabilities, training, and logistical support to COVID-19 response operations. CCMDs and partner nations leveraged relationships with DTRA to address critical shortages of locally-sourced personal protective equipment (PPE), test kits, laboratory equipment, training, and expertise, helping to ensure readiness and continuity of operations.

The Joint Science and Technology Office (JSTO) – a DTRA function, supporting the DoD Chemical and Biological Defense Program (CBDP) – executed \$55 million in CARES Act R&D funds for work on vaccines, therapeutics, diagnostic tools, detection devices, computer modeling (disease spread projections), and other efforts. Early in the pandemic, working with partners, we provided expertise to adapt existing technologies to assist in the fight; for example, USTRANSCOM leveraged the Transportation Isolation System – originally developed in response to the 2014 Ebola outbreak – to transport COVID-positive patients. Remdesivir, a therapeutic developed for Ebola, became the first FDA-approved treatment for COVID-19.

The expert analysis DTRA provided to DoD, the Department of Health and Human Services, Centers for Disease Control, and the White House helped identify and forecast emerging COVID hotspots. This critical analysis enabled the government to surge limited PPE, therapeutics, critical care beds, ventilators, and other vital medical equipment nation-wide. Our epidemiological forecasts were also linked to key defense performers within the Defense Industrial Base, keeping the nation one step ahead of COVID impacts to defense manufacturing and logistics. While the global pandemic was the unanticipated challenge of 2020, I am proud of DTRA's contributions to the domestic and international response.

Our Strategic Mission: Reduce Global WMD & Emerging Threats

The functions DTRA undertakes as a Defense Agency – those that meet DoD goals, priorities, and mandates – are often our more strategic functions: deterrence and arms control; and building partner capacity, or BPC.

Deterrence and Arms Control

As China, Russia, and North Korea modernize and expand their nuclear forces, DTRA supports the Services and United States Strategic Command to ensure the U.S. strategic deterrent continues to be safe, secure, and credible while protecting the American people, our homeland, and our allies and partners. Focusing on critical infrastructure, site vulnerability, and control measures in place for U.S. nuclear weapons, components, and materials, DTRA provides monitoring, oversight, assessments, and support for inspections and exercises. Our Inspection Teams ensure positive control and enhance resilience within the nation's nuclear force. Additionally, DTRA models nuclear employment effects, and examines emerging trends that could complicate U.S. deterrence operations or defense planning through workshops, roundtables, tabletop exercises, and symposia. This work informs consequence management analysis, improves Joint Force survivability, and signals U.S. resolve to those that challenge U.S. actions.

Effective and verifiable arms control is in the U.S. national security interest and makes the United States and its allies and partners more safe and secure. On behalf of DoD and the Nation, DTRA executes highly sensitive, intrusive on-site activities abroad, across an array of treaties – including the New Strategic Arms Reduction Treaty (New START), the Treaty on Conventional Armed Forces in Europe (CFE), and the Vienna Document 2011 (VD11). DTRA personnel likewise protect U.S. equities and facilitate treaty compliance by escorting foreign inspections of U.S. facilities, units, and activities under these agreements and arrangements as well as the Chemical Weapons Convention (CWC).

Building Partner Capacity: Nonproliferation

As the Interim National Security Strategic Guidance states, American nonproliferation leadership is essential to reducing the dangers posed by nuclear weapons. As part of our efforts to *detect* and *deter* WMD and emerging threats, we work with CCMDs, interagency, allies, and partners to prevent the proliferation of WMD and related materials. We apply deep subject matter expertise and data analytics to support nonproliferation policy and goals across the USG. Our custom analytical tools enable CCMDs to illuminate WMD procurement networks and provide the interagency and law enforcement with information they need to disrupt proliferation – a global effort to stop trafficking of WMD, its delivery systems, and related materials.

Building Partner Capacity: Cooperative Threat Reduction & Biological Threat Reduction

While DTRA builds partner capacity through many lines of effort, a standout is the Nunn-Lugar Cooperative Threat Reduction Program (CTR). Under Policy guidance from USD(P) and in close collaboration with interagency partners such as the Departments of State and Energy, the Agency works with partner countries to prevent the proliferation of WMD and eliminate chemical, biological, radiological, and nuclear (CBRN) threats to the U.S., allies, and partners. CTR eliminates WMD stockpiles, provides support to consolidate, secure, and account for the materials or items, and enables partners to detect and prevent WMD trafficking around the world.

CTR also includes the Biological Threat Reduction Program (BTRP), which builds capabilities to detect and track Especially Dangerous Pathogenic (EDP) diseases with the potential to affect national security. BTRP links the U.S. to over 30 foreign partners, enhancing national, regional, and global biosafety, biosecurity, and biosurveillance capabilities. While COVID-19 has made BTRP more prominent, the increasing incidence of EDP outbreaks – up to and including an ongoing local Ebola outbreak in Guinea and the Democratic Republic of Congo – has proven this program’s value to global health security time and again.

Emerging Threats

Fundamental to our ability to prepare for and avoid surprise is DTRA’s continual analysis of emerging technologies and their applications. To that end, using the highest classified information from the U.S. Intelligence Community and merging it with our deep scientific and technical knowledge, we are continually scanning the horizon for indications of emerging threats and their potential impact on the battlespace. As a key partner in the CBDP, we lead science and technology efforts to understand threat agent science: the analysis of novel and potential threats, in order to characterize operational risk and develop countermeasures (both material and non-material). And when new technologies gain salience – as Unmanned Aircraft Systems (UASs) have in recent years – it is often DTRA who leads initial exploration into the threat and potential countermeasures, characterizing the threat space to inform future requirements. As an example of this effort, DTRA successfully transferred its programs and knowledge-base on small UASs to the new DoD Joint Capability Office (JCO), while retaining the authority to analyze small UAS incursions into U.S. installations.

Our Operational Mission: Identify, Develop, and Field Solutions to Counter WMD and Emerging Threats

As a Combat Support Agency, DTRA responds to cross-cutting Joint Force and CCMD requirements, meeting capability gaps with innovative material and non-material solutions to improve readiness, enhance and speed leadership decision-making, and increase force survivability.

Research, Development, Test & Evaluation

Our Research, Development, Test & Evaluation (RDT&E) programs develop and field CWMD capabilities for the Joint Force, while at the same time exploring potential technologies to identify, characterize, and counter emerging threats. DTRA teamed with the Army to develop and field a vehicle-mounted long-range radiation imaging system, which can detect and report radiation levels from a safe distance, monitor crew exposure, and protect warfighters on the nuclear battlefield. In support to CBDP, we prototyped protective systems for warfighters operating in hazardous chemical or biological environments. For the U.S. Air Force, we develop advanced conventional warheads capable of neutralizing WMD targets while minimizing collateral effects.

Effects Modeling / Response Support

DTRA also maintains a 24/7, world-class CBRN effects modelling capability that supports all levels of the U.S. Government as well as international allies. This specialized capability enhances CBRN preparation and response activities, and informs both offensive and defensive decision-making during WMD incidents. From 2019 to 2020, DTRA answered over 2,000 requests for information: 1906 in support of DoD, 161 for interagency partners, and 13 on behalf of partner nations. In support of the Federal Emergency Management Agency (FEMA) and first responders, we provided hazard analysis of atmospheric and waterborne plumes 74 times – helping to safeguard the environment and the American public.

DTRA Support to Special Operations

DTRA directly supports the unique needs of U.S. Special Operations Command (USSOCOM), in its role as the DoD Coordinating Authority for CWMD, and as it rebalances deployed forces to meet the demands of both counter-violent extremist organization (VEO) and great power competition. DTRA's support for SOCOM's "no-fail" mission to *defeat* WMD in the field will

remain critical. Agency experts – from scientists to Explosive Ordnance Disposal (EOD) technicians – provide direct support to SOF missions in a “team of teams.” Linking agencies from the Department of Energy, the Department of Justice, National Labs, the Defense Advanced Research Projects Agency (DARPA), and the Intelligence Community, DTRA drives innovation for SOF CWMD. In these relationships, DTRA participates fully in a whole-of-government approach that not only enables SOF, but reaps benefits across the CWMD and emerging threats space. And ultimately, while we take this opportunity to highlight our relationship with SOCOM, the role of DTRA in supporting Special Operations reflects our robust and on-going relationships across the Joint Force – for each CCMD.

Conclusion

There are few greater challenges to U.S. National interests than those posed by WMD and emerging threats. As a Defense Agency, we work to *reduce global WMD threats* through counterproliferation, international cooperative programs, and building partner capacity; as a Combat Support Agency, we bring our deep technical expertise to bear, responding to CCMD and Joint Staff requirements to *identify, develop, and field solutions* through operational analysis, planning activities, RDT&E, agile acquisition and technical subject matter expertise. Our world-class, operationally-informed workforce and unparalleled professional network, access, and credibility give us unmatched advantage in enabling the DoD, USG, and International partners to detect, deter, and defeat WMD and emerging threats in every theater.

Dr. Rhys M. Williams, Acting Director

Dr. Rhys M. Williams, a Tier 3 member of the career Senior Executive Service, is the Acting Director, Defense Threat Reduction Agency (DTRA). Dr. Williams leads the 2100 military and civilian members of the Agency, operating in over 50 countries, and executes over \$2.4B to support U.S. nuclear operations, counterproliferation, nonproliferation, arms control, and counter network activities across the WMD and improvised device threat space. As a Combat Support and Defense Agency, DTRA provides the Combatant Commands and Services leading edge capabilities to execute their mission across the full continuum of gray zone and warfighting activities.

Prior to assuming his current position, Dr. Williams served as the Director for Research, Development, Test, and Evaluation activities for the Agency. He directed a geographically-dispersed military and civilian workforce of more than 450 Ph.D. level engineers and scientists and executed an annual budget of more than \$1B. He led the Department of Defense's primary science and technology (S&T) program to develop capabilities to detect, deter, and defeat foreign chemical, biological, radiological, and nuclear Weapons of Mass Destruction (WMD), as well as improvised threat devices. As one of the S&T Executives for DoD, Dr. Williams was the senior Agency S&T interface with the Military Services and the DoD, Office of the Undersecretary of Defense for Research and Engineering (USD(R&E)).

Dr. Williams previously served as the Assistant Deputy Administrator (Deputy Assistant Secretary – DAS position) for Defense Nuclear Nonproliferation R&D at the U.S. Department of Energy's National Nuclear Security Administration (NNSA). In addition, he also served as Acting Principal Deputy Administrator (PDAS level) for Defense Nuclear Nonproliferation within NNSA.

Dr. Williams specializes in issues at the intersection of technology development and national security policy. He led policy, R&D, analytical, and operational organizations in both the public and private sectors with a specific focus on nonproliferation and counterproliferation activities.

Dr. Williams holds a Bachelor of Science in Engineering Physics from Miami University; a Master of Arts in International Science and Technology Policy from the Elliott School of International Affairs at George Washington University; and a Ph.D. in Public Policy, with an emphasis in science and technology policy in a national security context from the School of Public Policy, George Mason University. A former submarine officer, Dr. Williams was qualified as a nuclear power plant manager through the Naval Nuclear Propulsion Program and also served as a nuclear weapons officer. He is the author of a number of publications, including a National Intelligence Estimate. Dr. Williams is a level 3 acquisition professional and the recipient of a Presidential Rank Award.

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MAY 4, 2021

QUESTIONS SUBMITTED BY MR. LARSEN

Mr. LARSEN. What is the Unity of Effort Council's plan on updating Congress on its prioritization deliberations and conclusions for legacy and emerging technology capabilities?

Ms. WALSH. The DOD CWMD-Unity of Effort (UoE) Council co-Chairs and Vice Chair are prepared to provide a classified briefing to Congress on the DOD CWMD priorities. These priorities consider the current and emerging threat environment, including key actors and WMD capabilities, and provide guidance on how the Department must address these risks. The CWMD-UoE Council itself is not directly addressing U.S. legacy and emerging technology capabilities.

Mr. LARSEN. Are there specific examples of DOD's shift from legacy to new technologies? Is this shift a part of the Unity of Effort Council deliberations?

Dr. VANN. The term "legacy" in part refers to technologies and weapons systems that are ill-suited against advanced threats or are no longer operationally effective in executing the mission for which they were originally intended. The Interim National Security Strategic Guidance directs DOD to shift resources away from such technologies or systems and to redirect investments to cutting-edge capabilities that will determine our advantage in the future. Furthermore, the Secretary has said equipment and weapon systems become obsolete when more capable, less expensive, or more efficient replacements become operational. While this isn't a specific topic being discussed within the CWMD Unity of Effort (UoE) Council, the ASD(NCB), as its vice chair, represents key equities related to advancing cutting-edge technologies and the needed RDT&E investments to support DOD's shifting focus to address emerging threats. This includes informing the UoE Council's ongoing CWMD prioritization effort and the planned strategic review and guidance development efforts in the coming year.

In an effort to modernize capabilities and in many cases drive down costs, the Department of Defense has invested significantly in research and development efforts leveraging technologies developed by academia and top performers in the commercial sector. Specific technologies include:

- **Organ-on-a-Chip.** There is a need for alternative ways to model human diseases and accelerate development of new drugs. Traditional animal models (in vivo) do not accurately mimic human pathophysiology and are time consuming. Organ-on-a-chip technologies are cutting costs and drug development timelines while providing results comparable to or better than traditional animal methods. The DOD is leveraging organ-on-a-chip technology to evaluate and characterize emerging chemical and biological threats and to advance drug development.
- **Medical Countermeasure Platforms.** Platform technologies are ideal for producing new drugs against new threats and emerging pathogens as well as reducing the costs of drug development. They do this by employing a "building block" development approach, whereby various modular components are swapped in and out to construct a variety of therapeutics or prophylactics. The DOD is focused on optimizing existing monoclonal antibody platforms to enhance the identification of new targets for drug development as well as developing new platform technologies for DNA vaccines.
- **Integrated Early Warning (IEW).** Integrated Early Warning describes a set of materiel and non-materiel capabilities that provide awareness and understanding of CBRN threats and hazards. By investing in IEW, we will enhance a commander's ability to make decisions that enables the successful conduct of operations in CBRN environments. Accomplishment of this end state is enabled by capabilities that align across the Force Integration, Battlespace Awareness, Logistics, Command and Control, Communications and Computers, and Protection Joint Capability Areas. Rapid development of enabling technologies in information technology, algorithm development, sensors, diagnostics, and unmanned platforms has converged with novel non-materiel solutions, leading to a vast landscape of potential IEW solutions. Capitalizing on IEW materiel and non-materiel capabilities is a top priority of the Services and Combatant Commands in order to enhance Joint Force lethality.

Mr. LARSEN. You started to address how DTRA works to upskill service members to ensure they understand the uses of emerging technologies generally and in the field. Could you provide a more comprehensive explanation of this effort?

Dr. WILLIAMS. DTRA works to ensure service members are able to understand the use of emerging technologies in several different capacities. One of the more foundational is the Defense Nuclear Weapons School (DNWS), from which we provide formal training on a wide variety of radiological, nuclear and CWMD topics to the Services and other Federal Agencies. We compliment this training with Technical Support Groups (TSGs), which work directly with specialized forces in the Combatant Commands. A third area we contribute is in providing threat analyses on enemy tactics, techniques, and procedures for employing emerging threats on the battlefield. Additionally, as we work in research, development, test and evaluation of new (or rapid adaptation of existing) capabilities, we engage our close partnerships with the Combatant Commands to train and field-test those capabilities in the field.

Finally, our work with the Services, Joint Staff, and the Combatant Commands in consulting, developing, and executing operations plans and exercises, as well as our 24/7 technical reachback capability, provide DTRA a continuous voice in ensuring service members plan and train as they will need to fight—with the best information on emerging threats we can provide.

QUESTIONS SUBMITTED BY MR. KELLY

Mr. KELLY. According to USA Spend, DTRA has provided EcoHealth Alliance grants for research to support its Biodefense mission. EHA in recent years has chosen the Wuhan Institute of Virology as a research partner in recent years through an NIH grant. As noted in the State Department Fact Sheet of 1/15/21, the Wuhan Institute of Virology has troubling links to the Chinese military. Is EHA still a grantee of DTRA? What type of risk analysis does DTRA do to ensure that its research dollars are wittingly or unwittingly funding a malign actor such as China? Has EHA's relationship with the WIV and China disqualified it as the partner of choice for DOD and DTRA?

Ms. WALSH. The Defense Threat Reduction Agency (DTRA) has not provided funding to EcoHealth Alliance (EHA) for work at the Wuhan Institute of Virology (WIV), or for any other activity in the People's Republic of China (PRC). EHA is a DTRA grantee on projects in other countries in the Indo-Pacific region. On behalf of the Chemical and Biological Defense Program, DTRA executes requirements-based DOD biodefense missions according to established program management practices. For each grant DOD awards, DTRA engages with applicants early in the project development process to confirm that only DOD-authorized sub-recipients are considered. DTRA program managers, certified DOD acquisition professionals, review each grant proposal with an eye toward finding prohibited activities (technical or fiscal), according to established procedure. Additionally, DOD performs periodic oversight of all grants through required financial and technical reporting, meetings with stakeholders, and site visits to ensure that research is conducted only as authorized.

QUESTIONS SUBMITTED BY MR. BACON

Mr. BACON. For your respective organizations, what do you see as the most critical unresolved technical challenges in the countering weapons of mass destruction mission space?

Dr. VANN. The most critical challenge is being able to rapidly recognize, characterize, and respond to emerging threats. The National Defense Strategy mandates that the Department focus the readiness of the future force against near peer adversaries, who are actively researching novel forms of chemicals that have been or could be weaponized. These malign states and actors are also viewing the accelerated advances in biology and genetic engineering as new mechanisms to develop new biological weapons. Anticipating and overcoming these increasingly complex threats requires renewed focus, innovative thinking, and clear priorities. The Department's CB defense capabilities are a key component of an integrated national effort to counter weapons of mass destruction and address traditional and emerging CB threats.

Mr. BACON. The University of Nebraska hosts a DOD University Affiliated Research Center, the National Strategic Research Institute, which is the only DOD UARC focused specifically on the CWMD mission area including Nuclear Detection and Forensics, Detection of Chemical and Biological Weapons, Defense Against Weapons of Mass Destruction, and Consequence Management. What actions on cur-

rently underway to leverage this UARC in support of DOD's CWMD strategy and what more should be done to fully leverage this capability and investment?

Dr. VANN. The Chemical and Biological Defense Program (CBDP) works closely with a range of partners in industry and academia on science and technology (S&T) research and development (R&D) to stay ahead of complex and rapidly changing novel and emerging threats.

University Affiliated Research Centers (UARCs) are key to driving innovation and expediting our R&D capabilities. In particular, the CBDP's Joint Science and Technology Office (JSTO) funds a number of ongoing efforts with the University of Nebraska's National Strategic Research Institute (NSRI) UARC. A recent example was testing and assessment of the Portable Biocontainment Care Module at the Joint Base Charleston, SC, to determine if there was a better option to transport COVID infected military service members as compared to the capability developed during the 2014 Ebola outbreak. In addition, the CBDP has leveraged the unique expertise NSRI provides to enable the development of novel capabilities for biological and chemical detection. In February 2019, NSRI supported the CBDP's Reactive-Chemistry Orthogonal Surface and Environmental Threat Ticket Array Program (ROSETTA) and its Compact Vapor Chemical Agent Detector (CVCAD) Program by partnering with the Joint Program Executive Office for CBRN Defense (JPEO-CBRND) to host a chemical detection vendor-user interaction day. The event brought together the Joint Services and technology vendors in industry and in academia for information exchange to support the development of innovative detection systems for these programs of record.

JSTO leveraged NSRI in July 2019 to host a perimeter defense technology rodeo bringing together technology vendors and Joint Service members on the topic of autonomous biodetection systems. In February 2020, JSTO and JPEO-CBRND partnered with NSRI to host a Proximal Chemical Agent Detector (PCAD) tabletop exercise (TTX) for combat developers and service members to discuss technology requirements for this program of record. More recently in March 2021, the CBDP invested again in NSRI's expertise to host a TTX focused on detection capability for emerging threats. Specifically, this TTX provided the opportunity for the Joint Services to discuss the Pharmaceutical Based Agents (PBA) threats and learn about existing PBA detection capabilities. The CBDP is also funding NSRI to develop innovative technologies for hazard mitigation, advanced detection and decontamination, advanced biological sampling, and bioaerosols detection. As threats continue to evolve and with it, the Joint Force's requirements, the Department will continue working with government, industry and academic partners, including the NSRI, for innovative solutions and capabilities to meet the Warfighter's needs.

Mr. BACON. For your respective organizations, what do you see as the most critical unresolved technical challenges in the countering weapons of mass destruction mission space?

Admiral SZYMANSKI. [No answer was available at the time of printing.]

Mr. BACON. The University of Nebraska hosts a DOD University Affiliated Research Center, the National Strategic Research Institute, which is the only DOD UARC focused specifically on the CWMD mission area including Nuclear Detection and Forensics, Detection of Chemical and Biological Weapons, Defense Against Weapons of Mass Destruction, and Consequence Management. What actions on currently underway to leverage this UARC in support of DOD's CWMD strategy and what more should be done to fully leverage this capability and investment?

Admiral SZYMANSKI. [No answer was available at the time of printing.]

Mr. BACON. For your respective organizations, what do you see as the most critical unresolved technical challenges in the countering weapons of mass destruction mission space?

Dr. WILLIAMS. In the countering WMD space, DTRA covers a broad spectrum of strategic and operational functions. Responsive to both DOD policy and validated requirements from the field, we engage in deterrence, treaty verification, interagency and international partnerships, and analysis, research, development, test and evaluation portfolios that allows us to spend time exploring threat and counter-threat concepts we think will have relevance in the future.

Widely-available commercial technologies have reduced barriers to entry, across a variety of technologies. For instance, both the synthetic biology and chemical threat space provide access and lower cost for malign actors. The convergence of computer science, synthetic biology, and related fields—previously separate disciplines—has also opened the door to the rapid prototyping of novel threat agents, new and difficult-to-trace delivery methods, and changes in adversary approach to warfare. Compounding these factors, the application of artificial intelligence, quantum computing, and big data are transforming the nature (and potential impact) of current and future WMD; these “layering technologies” will create new opportuni-

ties for national states and transregional actors to enhance lethality and unpredictability, increasing the potential for strategic and tactical surprise.

We are already in competition for agile and responsive understanding and use of these technologies; both Beijing and Moscow have unveiled long-term strategic plans to invest in key technologies like robotics and machine learning to offset perceived U.S. military advantage. Our ability to forecast and rapidly identify adversary applications of these technologies is critical to countering them. For DTRA, we will continue to mean integrating and harnessing our core functions: enabling strategic deterrence; supporting treaty inspection and verification; partnering—across the DOD, U.S. Government, and with international partners—to reduce threats; identifying vulnerabilities and mitigation strategies; and looking over the horizon to develop and deliver rapid capabilities.

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Dr. WILLIAMS. DTRA leverages a variety of acquisition strategies and performers including University Affiliated Research Centers (UARC) to efficiently and effectively meet DTRA's CWMD mission. With the National Strategic Research Institute (NSRI) UARC, DTRA manages a post-doctoral contract for subject matter expertise from various disciplines, including nuclear engineering, nuclear physics, radiochemistry, Natural Language Processing, and wargaming. NSRI also provides DTRA with solutions for advanced sensing systems designed to support the warfighter during hard target and battlefield surveillance and reconnaissance of WMD threats.

QUESTIONS SUBMITTED BY MR. FRANKLIN

Mr. FRANKLIN. Given the rising tensions with North Korea, what is our ability to operate through a contaminated environment? What are our greatest vulnerabilities to a chem/bio attack?

Ms. WALSH. We have answered this question in a classified attachment.

Mr. FRANKLIN. Dr. Vann, does the U.S. currently possess the capabilities to adequately counter the biological threats posed by our adversaries? If not, how do we get there and what must we prioritize in order to be effectively postured?

Dr. VANN. Advances in biotechnology and its convergence with other sciences and technologies is driving an unprecedented and rapidly evolving biological threat landscape which requires creativity, innovation, focus, and relentless prioritization. In the CWMD portfolio, not only must our defensive capabilities outpace the threat from our adversaries, but we must also develop a resilient response and recovery capability to ensure the Department and the Nation can continue to operate and thrive in the event of any future biological incident, whether maliciously directed or naturally occurring.

The Department continues to collect and assess lessons learned from the COVID-19 pandemic in order to improve its biodefense posture and preparedness for the future. Nonetheless, it is clear that the Department must continue to support cutting-edge research and development with international, interagency, industry, and academic partners in order to keep pace with the evolving threat landscape. Our collaborative approach, working with partners at all echelons, breeds innovation and reduces enterprise risk as we work to develop effective medical and physical countermeasures against WMD threats. For example, the Chemical and Biological Defense Program is working to develop an agile threat characterization portfolio that leverages new and innovative technologies to efficiently identify and rapidly characterize novel and emerging threats, which supports our ability to develop novel medical countermeasures, detection and diagnostic capabilities, protective equipment, and mitigation capabilities. The development of such capabilities removes the strategic advantage that adversaries may see in using biological threats.

Mr. FRANKLIN. How much concern does the Department place on state or non-state actors weaponizing new or emerging infectious diseases such as COVID-19, and what is DOD doing to combat this potential threat?

Dr. VANN. Congressman Franklin, thank you for the question. I respectfully request the opportunity respond in a classified setting to provide an answer.

Mr. FRANKLIN. Vice Admiral Szymanski, regarding emerging technology and given China's known desire to create biological weapons targeting certain genetic profiles,

what national security implications do you see for individuals who send their DNA to commercial companies for DNA review?

Admiral SZYMANSKI. [No answer was available at the time of printing.]

Mr. FRANKLIN. Vice Admiral Szymanski, what were the most significant findings from SOCOM's Annual CWMD Assessment?

Admiral SZYMANSKI. [No answer was available at the time of printing.]

Mr. FRANKLIN. Dr. Williams, what are the financial strains you foresee on CWMD programs as a result of COVID-19?

Dr. WILLIAMS. Throughout the COVID-19 pandemic, DTRA has prioritized programs that advance our CWMD mission. By working closely with our academic and contract performers we have continued to deliver capabilities in support of the Joint Force. That being said, we have seen some lag from contract performers on non-COVID tasks, as they navigated the challenges of reduced staffing levels. This disruption was most prevalent in academia, as many universities shuttered research facilities during the height of the pandemic; many of them are just now getting back up and running. Delay in execution—and other practical matters, like cancelling travel—has lowered our execution rates this year. Our ability to shift some requirements to a virtual setting, and the flexibility of various multi-year appropriations, helped mitigate some of the financial impact.

I am certain that our national (and international) experience with COVID will continue to lend salience to the need for robust CWMD programs.

QUESTIONS SUBMITTED BY MS. SHERRILL

Ms. SHERRILL. What provisions are we aware of within other nuclear weapon states that require their chief executive to consult with another deliberative or government body prior to undertaking a first or preemptive nuclear strike?

What provisions exist requiring a future President of the United States to consult with Congress, other senior executive branch personnel, or any other government official or body prior to undertaking a first or preemptive nuclear strike?

Dr. VANN. The President retains the sole authority to employ U.S. nuclear weapons. He exercises this authority in his Constitutional role as Commander in Chief of the U.S. Armed Forces. This existing command and control system for nuclear weapons provides for consultation with the President's senior national security and military advisors, particularly in a case that did not involve a pre-planned deliberative response. Any direction by the President to employ nuclear weapons would require the involvement of several layers of military personnel to execute the order (there is no mechanical "button"), and U.S. military personnel are trained in the law of armed conflict and to comply only with lawful orders. Depending on the circumstances, consultation with or authorization by Congress could be necessary due to its constitutional responsibility to declare war. As with any decision regarding the use of force by the President and matters regarding his or her Constitutional authorities, the President would seek the advice or opinion of the Attorney General as the chief law officer of the Federal Government. Regarding provisions in other nuclear weapon states, we respectfully refer you to the intelligence community who can provide an in-depth answer to this question.