

[H.A.S.C. No. 117-76]

HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2023
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED SEVENTEENTH CONGRESS
SECOND SESSION
SUBCOMMITTEE ON INTELLIGENCE AND
SPECIAL OPERATIONS
ON
**REVIEW DEPARTMENT OF DEFENSE
STRATEGY, POLICY, AND PROGRAMS
FOR COUNTERING WEAPONS OF MASS
DESTRUCTION FOR FISCAL YEAR 2023**

HEARING HELD
APRIL 1, 2022



U.S. GOVERNMENT PUBLISHING OFFICE

48-628

WASHINGTON : 2023

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**REVIEW DEPARTMENT OF DEFENSE STRATEGY,
POLICY, AND PROGRAMS FOR COUNTERING WEAPONS
OF MASS DESTRUCTION FOR FISCAL YEAR 2023**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS,
Washington, DC, Friday, April 1, 2022.

The subcommittee met, pursuant to call, at 10:01 a.m., in room 2118, Rayburn House Office Building, 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. Welcome to the Subcommittee on Intelligence and Special Operations, countering weapons of mass destruction FY23 [fiscal year 2023] budget hearing.

I am going to read a mandatory statement for our digital participants.

Members who are joining remotely must be visible onscreen for the purpose of identity verification, establishing and maintaining a quorum, participating in the proceeding, and voting. Those members must continue to use the software platform's video while in attendance, unless they experience connectivity issues or other technical problems that render them unable to participate on camera.

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Finally, I have designated a committee staff member to, if necessary, mute unrecognized members' microphones to cancel any inadvertent background noise that may disrupt the proceedings.

Good morning. I want to thank our witnesses for joining us today.

Dr. Deborah Rosenblum, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Threats; Dr. John Plumb, Assistant Secretary of Defense for Space Policy; Vice Admiral Collin Green, Deputy Commander, U.S. Special Operations Command; and Dr. Rhys—I apologize if I said that incorrectly—Williams, Acting Director, Defense Threat Reduction Agency. We appreciate your leadership and service to the Nation at this critical time in global security.

The erosion of international norms regarding the use of chemical and biological weapons, coupled with emerging technology that creates the ability to weaponize synthetic drugs, requires us to think about weapons of mass destruction [WMDs] in new ways.

While the United States is in full compliance with its obligations under both the Biological Weapons Convention and the Chemical Weapons Convention, Russia and North Korea, according to the Department of State's 2021 Compliance Report, both maintain offensive biological weapons programs, and both have used such weapons against political opponents with near impunity.

Vladimir Putin uses WMDs and the threat of WMDs to inflict terror on populations, as is happening right now in Ukraine and Europe. Russia is promoting dangerous disinformation, which falsely claims that the U.S. is secretly developing biological weapons in a Ukrainian laboratory. This effort appears to be part of Putin's plan to keep the door open to employing Russia's own illegal biological or chemical weapons in Ukraine through a false-flag operation.

Today, I am interested in our witnesses assessing how the fundamental changes to the security environment in Europe are altering how we think about and plan to deter, detect, and mitigate threats from WMDs, and to what extent this planning is reflected in DOD's budget request.

I am also interested in hearing about the progress towards the destruction of the remaining stockpile of lethal chemical agents and munitions, as required by the Chemical Weapons Convention deadline, September 30th, and the congressionally mandated deadline of December 31st. I know the Department has been working tirelessly to ensure those obligations are met.

Dr. Rosenblum and Dr. Plumb, I understand you are holding the first-ever biodefense posture review. I appreciate the critical work you are doing in this area and look forward to hearing how the review is proceeding.

Finally, it is essential that we understand how all this connects to the budget request. I am pleased to see healthy increases across this portfolio, especially the Cooperative Threat Reduction Program which, contrary to Putin's false propaganda, has been instrumental in dismantling weapons of mass destruction, and the Chemical and Biological Defense Program with investments in vaccines and therapeutics.

I look forward to the 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 25.]

**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. And I want to thank each of you personally for meeting with me earlier this week and in-depth briefings, some in the SCIF [secure compartmented information facility], some open source. But I really appreciate that, and I think it will really facilitate this hearing.

I am eager to get an update on the progress of the Assembled Chemical Weapons Alternatives program, especially the activities at the Pueblo Chemical Agent-Destruction Pilot Plant. This subcommittee is keenly interested in the certification of the Static Detonation Chamber and ensuring the activities stay on schedule.

With regards to the threat environment, I look forward to getting an update on the capabilities of our adversaries, to include the usual bad actors of China, Russia, Iran, and North Korea, as well as the various terrorist organizations and networks.

The ongoing Russian aggression in Ukraine continues to cause worry about the use of WMDs in the region, especially looking at their past history and some of the false-flag operations that they have conducted recently and in the past.

Finally, I continue to be concerned about how the Biden administration's budget will affect our overall counter weapons of mass destruction preparedness. The ongoing use and threat of these weapons illuminate the direness of this problem. Failing to properly invest in these resources will have great consequences.

I want to thank our witnesses in advance for their time today. I look forward to continuing the 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.

Mr. GALLEGO. Thank you, Ranking Member Kelly.

We will now hear from witnesses, then move to the question-and-answer period.

Dr. Rosenblum, you are now recognized.

**STATEMENT OF DEBORAH G. ROSENBLUM, ASSISTANT SEC-
RETARY OF DEFENSE FOR NUCLEAR, CHEMICAL, AND BIO-
LOGICAL DEFENSE PROGRAMS**

Ms. ROSENBLUM. Thank you very much. Chairman Gallego, Ranking Member Kelly, and distinguished members of the subcommittee, it is truly a privilege to testify before you today on behalf of the Department of Defense.

As the Assistant Secretary of Defense for Nuclear, Chemical, and Biologic Defense Programs, I am responsible, in close coordination with my fellow witnesses, for ensuring that the United States maintains its enduring technical advantages when countering weapons of mass destruction.

In recent years, our adversaries have demonstrated the potential for chemical and biological weapons to achieve a broad range of ef-

fects—from small-scale assassinations to large population-scale effect. These offensive tools could also weaken and displace defensive forces, thereby, allowing adversaries to seize infrastructure, territory, or achieve a strategic advantage against the United States and our allies.

At the same time, different sciences and technologies are converging to create revolutionary capabilities with transformative benefits to our society, but it also opens the door to the potential nefarious uses. This is uniquely true for chemical and biological threats. For example, engineered biologic weapons could be designed to evade our existing physical and medical defenses by making subtle changes.

As a result, our deterrent and defensive postures must prepare for, and respond to, a broad spectrum of biological threats, whether naturally occurring, accidental, or deliberate. We can no longer rely on a static list of traditional agents to develop countermeasures against. Furthermore, the Department cannot presume that we will be able to provide the warfighter advanced warning or accurate pinpoint biological and chemical agent detection.

Faced with these challenges, we must change the way we do business by strengthening the Department's defensive capabilities through bolder acquisition approaches, while also using our inherent science and technology advantages. The Department seeks to modernize and strengthen the U.S. deterrent and defensive capabilities to ensure the joint force can fight and win in WMD-contested environments.

As the Department proposes a significant increase in chemical and biological defense across the FYDP [Future Years Defense Program], I would like to share three examples of how the Department will seek to deliver novel capabilities for the warfighter.

First, because emerging biologic threats can circumvent traditional concepts of detection, we need to change the paradigm by integrating all available sensors and data collection as a network of networks to identify changes within the environment, rather than waiting for the onset of symptoms in our warfighter.

Second, we must explore the concept of defending from within through preventive and post-exposure medical countermeasures.

Third, we are working to enhance protection, while reducing the burden to our warfighter, by replacing heavy, bulky, and extremely hot individual protective equipment with novel types of materials and responsive technologies to create a next-generation protection.

As I testify today about our adversaries' chemical weapons capabilities, I am proud to report we have destroyed 98 percent of chemical agents from the United States chemical weapon stockpile, and we are on track to complete the destruction of the entire United States legacy chemical weapons stockpile by the planned completion date of September 2023.

On behalf of the Department, I would like to thank each of you for your continued partnership and support to strengthen our WMD deterrence and defensive capabilities. The threat we face today cannot be understated.

I look forward to answering your questions in the later session. Thank you.

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

Mr. GALLEG0. And now, we would like to hear from Dr. Plumb.

**STATEMENT OF JOHN F. PLUMB, ASSISTANT SECRETARY OF
DEFENSE FOR SPACE POLICY**

Dr. PLUMB. Thank you, Chairman Gallego, Ranking Member Kelly, members of the subcommittee. I, too, am honored to testify on the Department of Defense's countering weapons of mass destruction efforts today.

The Department's CWMD mission is to dissuade, deter, and, when necessary, defeat actors of concern who threaten or use weapons of mass destruction against the U.S. and our interests. Mission success requires the expertise and collaboration across many DOD [Department of Defense] components, close coordination within the interagency and Congress, and strong international alliances and partnerships.

Today, Russia's unlawful invasion of Ukraine underscores the importance of the CWMD mission. In a period of just a few weeks, we have seen the threat of nuclear weapons use; we have seen attacks on Ukrainian nuclear power plants; and we have seen an extensive Russian disinformation campaign on chemical and biological weapons development in Ukraine—pure lies. That is most likely a troubling pretext for possible Russian use of these weapons themselves.

The DOD leverages its unique tools and expertise in support of a whole-of-government approach to mitigate the risk of global WMD proliferation and adversary pursuit of these advancements. Examples include supporting global norms under the Nuclear Non-Proliferation Treaty; remaining postured to conduct WMD interdictions and preparing our partners to do so; and implementing U.N. [United Nations] sanctions to impede illicit North Korean trade.

The Department's Cooperative Threat Reduction [CTR] Program, which has evolved over the past 3 decades and works with more than 30 partner nations, is an important and proven tool to reduce the risk of WMD-related threats and prevent proliferation across the CBRN [chemical, biological, radiological, and nuclear] spectrum.

And I would like to thank Congress, and this subcommittee in particular, for its continued support of the CTR [Cooperative Threat Reduction] program. This support has paid dividends to the U.S. and global security for over 30 years, and there is more to be done. I am pleased to note that the President's budget request for the CTR program is \$342 million for fiscal year 2023.

The Department continues to strengthen the capability of the joint force and our allies and partners to operate in chemical, biological, radiological, or nuclear, and contaminated environments. We strive for increased interoperability and we encourage our partners and allies to share the collective burden of CBRN defense.

But CBRN defense requires resources, and that is why the Department is seeking \$630 million across the FYDP to help bolster EUROM's [U.S. European Command's] CBRN defense capabilities and equipment. And interestingly—and I think a point worth making—is this budget request originated before Russia invaded

Ukraine, but that crisis further highlights that EUCOM CBRN defense is a priority and we have to address it.

Making investments to counter a shifting threat environment requires sound policy, and sound policy requires an understanding of where things stand. So, the Department—myself and Assistant Secretary Rosenblum—are undertaking our first-ever Biodefense Posture Review this year. This review will guide our biodefense-related activities and investments to support force protection, research and development, capability acquisition, and the required DOD expertise across the spectrum of biological threats.

And this year, the Department will also begin refreshing our CWMD strategy. That strategy will be informed by the bio posture review, as well as the National Defense Strategy, the Secretary of Defense's guidance, and our assessment of the shifting threat environment.

So, thank you again for the opportunity to testify today, for your continued support of the Department's CWMD mission, and I look forward to our discussion.

[The prepared statement of Dr. Plumb can be found in the Appendix on page 37.]

Mr. GALLEGO. Thank you.

I now recognize Vice Admiral Green.

**STATEMENT OF VADM COLLIN P. GREEN, USN, DEPUTY
COMMANDER, U.S. SPECIAL OPERATIONS COMMAND**

Admiral GREEN. 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 Dr. John Plumb, Ms. Deborah Rosenblum, and Dr. Rhys Williams at this hearing, and look forward to discussing how we work together to address some of the most critical national security challenges facing our country, our allies, and our partners.

Weapons of mass destruction are a complex, transregional problem that continues to present a direct threat to U.S. and allied interests and requires the application of specialized expertise and authorities across the whole of government. I welcome discussion related to USSOCOM's role as the Defense Department's coordinating authority for counter-WMD; the unique challenges we face; the work we have done against both current and future WMD threats; and our priorities for the coming year.

Over the past year, in concert with our partners within the Department and across the interagency, we contributed to the development of the National Defense and National Military Strategies; enhanced joint force resiliency through an implementation of WMD-focused ready assessments; improved global exercise and training by incorporating realistic nuclear, chemical, and biological threats into scenarios; and improved integration and information-sharing with the interagency, as well as our allies and partners.

However, as Dr. Plumb and Ms. Rosenblum said, Russia's unprovoked invasion of Ukraine, and the potential use of weapons of mass destruction, demands a sense of urgency in making deterrent and defensive investments. To that end, next year, in coordi-

nation with our partners in OSD [Office of the Secretary of Defense], the Joint Staff, and the interagency, we will continue to advance joint force readiness; produce actionable CWMD assessments; and make recommendations for improvement, where needed.

We will ensure the Department's plans address the evolving WMD threats. We will continue to accelerate information-sharing through close coordination with the intelligence community, and we will coordinate CWMD equities into globally integrated operations, activities, and investments.

General Clarke and I would like to thank the members of this subcommittee for their support of this urgent national security priority. It is a privilege to work together with our colleagues to keep our country and allies safe from the threat of nuclear, chemical, and biological weapons. We look forward to our continued collaboration with them, with Members of Congress, with our interagency and international partners, to ensure our safety and readiness now and into the future.

Thank you.

[The prepared statement of Admiral Green can be found in the Appendix on page 51.]

Mr. GALLEGO. Thank you.

Now, we have Dr. Williams.

STATEMENT OF RHYS M. WILLIAMS, ACTING DIRECTOR, DEFENSE THREAT REDUCTION AGENCY, UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

Dr. WILLIAMS. Chairman Gallego, Ranking Member Kelly, and distinguished members of the subcommittee, thank you for the invitation to testify today.

This committee and its members have long provided outstanding support to the Defense Threat Reduction Agency, also known as DTRA. I look forward to offering you an update on our vital work in countering and deterring weapons of mass destruction and emerging threats.

On behalf of the over 2,200 military and civilians, I am proud to appear today alongside Ms. Deborah Rosenblum, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; Dr. John Plumb, Assistant Secretary of Defense for Space Policy; and Vice Admiral Green, Deputy Commander, U.S. Special Operations Command.

There are few greater challenges to U.S. national interests than those posed by weapons of mass destruction and emerging threats. DTRA takes pride in providing the technological, the operational, and intellectual capacity within the Department to meet these challenges. Our world-class workforce and unparalleled professional network, access, and credibility give us an unmatched advantage in enabling the Department of Defense, the U.S. Government, and international partners to detect, deter, and defeat weapons of mass destruction and emerging threats in all theaters.

As both a defense agency and a combat support agency, and the principal counter weapons of mass destruction organization within the Defense Department, we serve as the linchpin between the Department's counter-WMD strategies and its practitioners. Through

Ms. Rosenblum and Dr. Plumb, and their subordinate components, the agency receives guidance, priorities, and oversight in the areas of nuclear matters, chemical and biological defense, threat reduction, and arms control.

At the same time, we support U.S. Special Operations Command role as the coordinating authority for counter weapons of mass destruction and work very closely with Vice Admiral Green's staff, as well as those of the other combatant commands—providing strategic, operational, and tactical planning and expertise, as well as embedded support of material and non-material counter weapons of mass destruction solutions.

These dual roles provide a synergy that is key to the successful execution of our counter-WMD mission that supports the National Defense Strategy's vision of integrated deterrence. The work that we plan, program, and execute on behalf of the Department and its stakeholders ensures a safe, secure, reliable, and effective nuclear deterrent; enables the joint force allies and partners to compete and win against adversaries. The National Defense Strategy highlights both of these lines of effort, as key enablers for integrated deterrence.

DTRA is postured and ready to support Secretary Austin's goal of developing, combining, and coordinating the Department's strengths to maximum effect. In pursuit of this goal, we play a key role across the counter-WMD community.

So, on behalf of DTRA's dedicated workforce, I thank you for your continued support of our critical work in safeguarding the lives and the interests of the United States, our allies, and our partners abroad.

Thank you for your time today and the invitation to participate. And I look forward to your questions. Thank you.

[The prepared statement of Dr. Williams can be found in the Appendix on page 62.]

Mr. GALLEGO. Thank you.

And I apologize for the construction. I am assuming it is contractors and not the Russians trying to drill in to listen to what is happening here.

We are going to move to our question period.

Dr. Rosenblum, we can start with you, and then move to anyone else who would like to comment.

Russia's misinformation-disinformation campaigns touch on all three main categories of WMD—biological, chemical, and nuclear. How do we frame our efforts in ways that account for the likelihood that Russia will probably continue this behavior?

Ms. ROSENBLUM. Thank you, Chairman, for that question.

The Department remains very concerned about the ability to get accurate and transparent information out to the U.S. public, as well as, certainly, our allies and the rest of the world. So, one of the things that the Department has been doing—and this is particularly related to the public health laboratories in Ukraine that is being, tragically, used by the Russians as a potential for a false-flag operation—from the White House on down to the Department of Defense, as well as Department of State, as well as all of the vehicles that we have to be able to communicate accurate information out about this, and the work that has been underway, I can

say to you, unequivocally, there are no offensive biologic weapons in the Ukraine laboratories that the United States has been involved with.

Mr. GALLEG0. Without a doubt.

Anyone else want to take the question or a crack at that?

[No response.]

Moving on then, Dr. Williams, the Cooperative Threat Reduction Program has unique authorities, like commingling funds from other nations for urgent threat reduction needs. Is CTR exercising these authorities actively? And can you share any recent examples?

Dr. WILLIAMS. Thank you for that question, sir.

Yes, sir, as you noted, the Cooperative Threat Reduction Program does have unique authorities within title 50, specifically. We do commingle funds that come in from other organizations. As a matter of fact, a recent amount of funding has come in from the United Kingdom for work in these particular areas.

We have a very active program, as was said earlier, in over 30 countries. Last year alone, we had 70 engagements across the Cooperative Threat Reduction Program, across all areas of responsibility in the combatant commands, closely coordinated, obviously, with Dr. Plumb and his office, where we receive those policy determinations on where to work within the agency.

So, sir, it is a very active program, and it is one that, as Dr. Plumb said, has paid incredible dividends over the 30 years that we have been working with this program. As a matter of fact, this year, we celebrated the 30th anniversary. It was a major milestone for the program.

Thank you for the question, sir.

Mr. GALLEG0. And to follow up, DTRA is focused on countering and deterring weapons of mass destruction. I am interested in hearing about the more advanced capabilities in countering and detecting chemical and biological threats, and specifically, actions you have taken to support what is happening in Ukraine. And obviously, if some of that has to stay during the classified briefing, we can do that, but anything that can be shared publicly would also be good to know.

Dr. WILLIAMS. Thank you. Thank you for that question, sir.

The agency is the science and technology portion of the Chemical and Biological Defense Program. It is operated under Ms. Rosenblum's authorities, as the Assistant Secretary for Nuclear, Chemical, and Biological Defense.

We work very closely, also, with the Army's Joint Program Executive Office for Chemical and Biological Defense to provide cutting-edge capabilities for the joint force, as well as in close coordination with our partners and allies as well—everything from leading-edge detectors, capabilities to weave together new data in new ways. As Ms. Rosenblum said, data is a place where we can spend a considerable amount of time in terms of activities.

And in terms of our activities in support of U.S. European Command, sir, in terms of those activities, we have had almost 200 requests for support from not only European Command, but across the DOD and interagency.

Sir, as you know, we run the 24/7/365 technical reachback capability that does modeling across the chem-bio-nuclear spectrum.

And because of that, we have been asked questions that range from, if something was to happen to a Ukrainian nuclear power plant, where would the plume go, and across the board. It is something we actively are monitoring now, sir, and I am happy to answer a few more specifics in the closed session.

Mr. GALLEG0. Thank you, Doctor.

I now yield to Ranking Member Kelly.

Mr. KELLY. Thank you, Mr. Chairman.

And as the Department balances the shift in resources between counter-VEO [violent extremist organizations] and great power competition, what are the most significant capability or resource and vulnerabilities to the countering weapons of mass destruction mission? Any of you all can take that, and if anybody needs to follow, you can.

Admiral GREEN. Yes, Congressman, thank you for the question.

So, as the coordinating authority, USSOCOM establishes a collaborative fora to understand the threat, identify gaps, and make recommendations. So, to your point, I think, much like any state or non-state actor, these pathways, understanding the pathways and understanding what runs through them, whether it is transnational organized crime, counterterrorism, or CWMD, I think we have got to collectively leverage our access and placement, our authorities, across the interagency, as well as DOD, but, more importantly, our allies and partners, to understand the threat left of bang.

So, I think we are doing that well with regard to how we understand the threat. I would also say that the Secretary, rightfully, directed that we integrate CWMD into planning, resourcing, modernizing, and then, more importantly, training and exercising holistically. It is not just about money; it is about the holistic effort to get after it.

Mr. KELLY. And I am just hoping to follow up. If there are any gaps or vulnerabilities in either resources or funding, I hope that you all—and I understand we probably can't answer that.

And I think, Dr. Rosenblum, you were going to say something.

Ms. ROSENBLUM. Yes, thank you very much, Ranking Member.

What I was going to add—and I think we can get into much greater detail on the classified side of it—but, from looking at closing the gaps that we have across the WMD spectrum and the investments, the main thing that we are pivoting from is concerns that it would be a non-state actor who would be using those to, then, really looking at state-based threats and the depth of the science and technology that they have available to them. And we can get into greater detail in terms of the specificity, but that is a dramatic pivot from a threat perspective.

Mr. KELLY. Thank you.

And then, in the PB submissions, the Presidential budget submissions for FY21 and '22, the Department drastically cut funds to the Cooperative Threat Reduction Program. Each time, Congress has reinstated this fund. Why is it important, Dr. Rosenblum, to fully fund this program?

Ms. ROSENBLUM. The Cooperative Threat Program provides and plays a critical role in ensuring that our allies and partners, who we will operate on any kind of joint battlefield, has capabilities

that are commensurate with those of the United States, so that we can work with them seamlessly. And that goes kind of a range of gamuts of things that we are doing throughout the world. But that is fundamentally the key purpose of that program and why it remains so vital to us.

And as my colleague, Dr. Plumb—and I will ask him to elaborate on this—mentioned, that in the FY23 request, that there is a significant increase in that, as the administration recognizes the importance of this program.

Mr. KELLY. Thank you, and you answered my question. I just want to make sure we understand the importance of fully funding that, and even the increase.

Given the increased use of chemical weapons in Syria and the asymmetric use of nerve agents by North Korea and Russia, what can we do to deter further use of chemical or biological weapons? What are we doing to ensure that the international norms against the use of these weapons is not eroded? And what can we do to develop new standards to deal with the emerging chemical and biological threats? And that is for any of you.

Dr. PLUMB. Thanks, Congressman Kelly. It is an important question.

And I think the crisis in Ukraine and the blatant threats, really, by Russia of potential use of chemical and biological weapons, is opening everyone's eyes to how much of a problem this is. The deterrence issue is a challenge for this administration. I think the fact that the White House has used the megaphone of the United States of America to call this out is an important deterrent, right?

I think we have been able to—and it is not just the administration side; it is working with the Congress, too—rally the entire NATO [North Atlantic Treaty Organization] alliance to kind of align against this, is useful. There is always this question of who, at least in the case of Russia, who is Putin really trying to communicate to? If he is trying to communicate with us, that is one thing. If he is trying to communicate with his own people, that is a different problem. So, we have this communication conflict that we really need to work on.

On a readiness side, there is some argument to be made that better readiness and better training, as the admiral spoke to, helps deter. I don't personally believe it is—you know it is necessary, but not sufficient. But the more ready we are to engage in a zone like that, then perhaps the higher the threshold is for its use.

Mr. KELLY. And I yield back, Mr. Chairman.

Mr. GALLEG0. Representative Larsen.

Mr. LARSEN. Thank you. Thank you, Mr. Chair.

I have several questions that I know are going to have to be answered later. But I will ask them anyway to use my 5 minutes, you know, because maybe there is a clue.

First off, for Admiral, as we look at strategic competition and this issue of WMD, and the role of SOF [special operations forces], are there specific areas where your coordinating authorities are needing to change or are there specific roles that you are seeking to change within the special operations community to meet that strategic competition WMD response?

Admiral GREEN. Yes, thanks for the question.

You know, I think this is a wake-up call with regard to CWMD, much like CT [counterterrorism] was. So, I think the coordinating authority and the work that we have done here with my colleagues to recognize this threat, to plan for it, like I said, to modernize, and then, to train and exercise, frankly, you know, it is a holistic approach.

But, from a special operations perspective, we bring capabilities to understand that threat, but so do the interagency, so do our allies and partners. So, I think it is all-hands-on-deck type of approach to understand this threat. It is a whole-of-population, it is a whole-of-government. I know those are clichés, but I really believe that this threat is serious enough, and I think this for a with the coordinating authority has brought recognition to it. And with money and, again, those other facets of how you get after it are critical.

But I do believe special operations provides unique capabilities, but it can't be only a military understanding piece. There is a role for, again, allies and partners.

Mr. LARSEN. Yes. Well, on that point—and this might be for later—but, for any of you, what role will U.S. forces play in NATO's recent CBRN defense element that was activated in EUCOM? Can anyone answer that here? Okay, I will ask Dr. Rosenblum.

I am sorry, I am making a mistake of 22 years; I know I have to ask a specific question to a specific—

Ms. ROSENBLUM. No, no, no, absolutely. I would like to take that one for the record to get back to you.

Mr. LARSEN. Okay. Can you get back to me by noon?

[Laughter.]

Ms. ROSENBLUM. Sure.

[Laughter.]

Mr. LARSEN. Okay. Got it.

Oh, yes, Dr. Plumb, I am on the Aviation Subcommittee as well. And so, we are tangentially involved in this discussion about debris management, because we regulate the airspace from the ground until a rocket gets to space, and then, it gets into space.

And I noted in your preparation, I think in your confirmation hearing, you had some discussion with the SASC [Senate Armed Services Committee] about the traffic debris management issue. Can you update us on where that is now? And is it a drag, right, because it is not resolved yet?

Dr. PLUMB. So, thanks, Congressman.

In the SASC hearing on that, I was asked about the Office of Space Commerce and the need to—so, this is outside of FAA [Federal Aviation Administration]. This is actually a Commerce piece. Obviously, FAA has it on the way up and down—

Mr. LARSEN. Right.

Dr. PLUMB [continuing]. Which is also important.

But the budget request is on the order of, I think, I want to say somewhere around \$85 to \$88 million, which is the right number. I had confirmed that since. So, I think that funding Office [of] Space Commerce at the right amount is going to give them that chance to get up-to-speed. Because you really have to fund not just an office, but you have got to get folks trained. You have got to get the software going. And so, there is, I think, a 3-year plan to kind

of get it up and running. And I think we are where we need to be, which was not true last year. So, I think this is a good-news story.

Mr. LARSEN. Okay. And that is good to know. Again, as you said, what goes up does, in fact, sometimes come down.

Dr. PLUMB. Very often.

Mr. LARSEN. And the FAA needs to clear the airspace if it is coming down in places that—

Dr. PLUMB. Yes, and I think, just to pull on that for a second, I do know there is more work to be done on that as well. And I think there is some regulation space for that that we could talk about offline, if you would like.

Mr. LARSEN [presiding]. Yes, sure. Okay. Great.

I am going to end there, and I will yield back the remainder of my time, and call on Mr. Scott, recognize Mr. Scott. He is off? Then, who would be next on that other side?

Representative Bacon for 5 minutes.

Mr. BACON. It is always good to be ready. Thank you, Mr. Chair.

And thanks to all four of you for being here today.

I have five questions. So, if I can't get through them, I hope I can get something on the second round here.

But my first question is for Honorable Ms. Rosenblum. How would you say our strategy or doctrine has to change with two near-peer powers with nuclear weapons? We are used to one major power. Now we are headed in the direction of two. How do you see this changing our doctrine or strategy?

Ms. ROSENBLUM. So, on that question, Mr. Congressman, I would like to take that more in the classified section.

Mr. BACON. Okay.

Ms. ROSENBLUM. There is something that the nuclear posture review that I know has been released to Congress on a classified basis goes into that. I am happy to answer that question on that.

But it certainly is something publicly that we have spoken about that is going to require the level of refinement and change to the strategy and to the doctrine—

Mr. BACON. Yes.

Ms. ROSENBLUM [continuing]. Because the rate of escalation—sorry. The rate at which the Chinese are moving ahead with the modernization of their nuclear program is dramatic and unprecedented, and particularly across all legs of the triad, and will require a rethinking on that.

Mr. BACON. Instead of playing a two-person chess game, now we have three people playing chess on the same board.

Ms. ROSENBLUM. Understood.

Mr. BACON. So, it changes it.

Dr. Williams, a quick question for you. How would have having the Open Skies aircraft made an impact to DTRA and to our U.S. military leading up to Ukraine and after?

Dr. WILLIAMS. Sir, I would say that the Open Skies process was one that was useful for the U.S. That said, obviously, the administration made the determination to end that. DTRA was the execution agency for the Open Skies mission, sir, and we are following the administration's priorities.

Mr. BACON. Understood. But would it have provided some useful information leading up to the invasion of Ukraine?

Dr. WILLIAMS. I would just say, sir, all information is useful.

Mr. BACON. Thank you.

It would be my position that it cost us not having this airframe leading up to the invasion, and I think we could have used it after the invasion as well.

Back to Ms. Rosenblum, would you say the administration is fully committed to a full recap of the triad?

Ms. ROSENBLUM. Yes, Mr. Congressman, I can answer that in open session. It is absolutely committed to the recapitalization of the triad, as well as the nuclear command and control that goes with that, along with the Department of Energy infrastructure and all of their facilities that are required to make all of the warheads associated with the modernization.

Mr. BACON. That is great news, and I think you will have bipartisan support on that.

I heard this week from a COCOM [combatant command] commander saying there was a need for low-yield nuclear weapons, or that it gave the commanders more options. As you know, Russia has invested heavily in this area and they have the escalate to de-escalate strategy. What is the administration's position on low-yield nuclear weapons?

Dr. PLUMB. If it is all right, Congressman, I will take that.

Mr. BACON. Sure.

Dr. PLUMB. So, first of all, I am aware of the comments you are referencing. I will say the W76—

Mr. LARSEN. If you could just get closer to the microphone?

Dr. PLUMB. I am sorry, is that better, Congressman?

Mr. BACON. Yes, sir.

Mr. LARSEN. Yes, thanks.

Dr. PLUMB. Okay. The W76-2, which is a low-yield warhead for a submarine-launched ballistic missile, remains deployed. So, that program continues. And so, from a deterrence standpoint of the ability to posture with a low-yield weapon, I think that covers that particular question. Of course, cards on the table, the SLCM-N, the submarine-launched cruise missile, which would be a tactical nuclear weapon by definition, that has been zeroed-out. And I think reasonable people can disagree if this is a thing that we should continue or not. But the modernization of the entire triad is firmly cemented in the budget and the NPR [Nuclear Posture Review], and the continuation of the W76-2 as well.

Mr. BACON. Thank you.

I will just close with a comment. It was something I had the honor of talking about yesterday.

We started about a 2-year process to do a surge capacity for pandemic bioweapons, have the surge capacity in the United States. And the military, or the DOD, in partnership with Health and Human Services, picked five sites, Omaha being one. It would be my request that the Department continue to fund this, put it in their budget request. The community is looking forward to partnering with DOD and HHS [U.S. Department of Health and Human Services] on this effort.

And with that, I yield back. Thank you.

Mr. GALLEGOS [presiding]. Representative Sherrill.

Ms. SHERRILL. Thank you.

As the coordinating authority, Admiral Green, what recommendations are you providing to the Secretary of Defense regarding best modernizing the Department's ability to prepare and respond to the current threat, given Russia's previous use of chemical weapons in Syria and the threat of chemical weapons use and biological weapons use in Ukraine?

Admiral GREEN. Yes, thanks, Congresswoman, for the question.

So, my boss submits an annual assessment to the SECDEF [Secretary of Defense] through the Chairman. And the two things that he cited were we need to aggressively increase our capability and capacity to counter WMD, and that we needed to prevent the strategic surprise, which was to focus cooperatively on understanding the intel threat.

But, with regard to modernization, I think we have got to leverage the authorities that you gave us, the Small Business Innovation Research, other transactional authorities, and middle-tier acquisition, to get after and partner with industry on things that can improve and modernize not only personal protective equipment, but detection and monitoring. And I think, as Ms. Rosenblum mentioned, we are getting after that. But I do believe we need to address that; we need to leverage those authorities a little bit more aggressively, and again, partner with industry on how we increase capability and capacity.

Ms. SHERRILL. Thank you.

And we spoke briefly about the CWMD senior leader seminars [SLS] that you are conducting with combatant commanders and, also, about the effectiveness of such seminars with preparing combatant commanders to address WMD threats from great power competitors in each theater. Are there common significant gaps that these seminars have identified across multiple combatant commands? And in your opinion, how can the Department modernize its WMD threat posture, and what steps can Congress take to move these modernization efforts along?

Admiral GREEN. Yes, thanks for that question.

And I think the most significant thing that this panel did in the last year is these senior leader seminars. We had one for EUCOM in February of 2021, and we just had one for INDOPACOM [U.S. Indo-Pacific Command] with Admiral Aquilino. And they were well attended by my colleagues here, as well as the interagency and our partners and allies.

And I think that the key piece of those senior leader seminars was it war-gamed the vulnerabilities that we may have with regard to our plans, our resourcing, and frankly, again, our training and exercises. So, I think those were an invaluable product of these stakeholders here that you have before you today. And we will continue to do those.

Specifically, the EUCOM one was done a year ago. And fortuitously, that has prepared us better for what we are dealing with today currently. And EUCOM implemented an implementation plan to get after some of the things that they needed to do, that they did do from then to now, with regard to those broader five things that I talked about that make us better postured today.

But the SLS is a great venue that the coordinating authority, and again, my panel members, have implemented.

Thank you.

Ms. SHERRILL. Thank you, and I look forward to getting into some more details in the closed session.

With that, I yield back.

Mr. GALLEGO. Representative Franklin.

Mr. FRANKLIN. Thank you, Mr. Chairman.

And I appreciate our witnesses being here today.

As a former naval aviator that spent more time than I care to remember in MOPP [mission oriented protective posture] gear, and now here in Congress reading about the threat and understanding how significant it is, I used to always—the value in those exercises to me was just praying to God that it never happened. But you all don't have that luxury. You have got to deal with it, and it is a very real threat that I fear too often is back-burnered. It doesn't get the attention it needs. And I know that is not the only things that you have on your plates, but it is vitally important. And if it ever happens, it will probably be one of the worst things that has ever happened to the United States.

But I do have a couple of questions. And, Admiral Green, you and I have had some conversations about the authorities and helping me understand how all of this shakes out, because it is a very complex problem set.

But I understand SOCOM's coordinating authority on the front end. I am curious, though, who would be the coordinating authority in an actual event after the fact?

Admiral GREEN. Well, the coordinating authority does not command; it doesn't convene. It recommends.

Mr. FRANKLIN. I understand. On your end, it is preparation of coordinating the operational plans. It is helping with the strategies. But if all that fails and we find ourselves with an actual event, who is, then, responsible? Because it seems very complex to me as to who takes charge then.

Admiral GREEN. Yes, I would say simply it is the combatant commanders. I mean, they execute the campaigning day-in and day-out, and they own the contingency plans and the OPLANs [operations plans]. As we speak, General Wolters owns the EUCOM AOR [area of responsibility].

So, this venue, the coordinating authority simply tries to support an understanding of the threat, identifying resourcing gaps, and then making recommendations across policy and force provider issues. But, ultimately, it is the combatant commanders.

Mr. FRANKLIN. Right. So, if we had a contaminated environment, obviously the COCOM is going to have to execute the battle plan and keep going forward, but how do we go about—who coordinates the mitigation efforts to allow them to continue to move forward? And whoever might want to answer that. It is just I have a hard time understanding how it unfolds after the fact.

Ms. ROSENBLUM. So, that would be done, actually, on the ground operationally, but by the joint force right there. So, if you were to have a contaminated environment on, say, a logistics or a flow-through base that the United States or its allies were using, and were they to be contaminated, the forces immediately there on the base would be dealing with the—excuse me—to decontaminate—I

apologize—that area and the equipment, in order for the force to be able to continue to proceed with its mission.

Mr. FRANKLIN. Okay. We saw with great success, I think, during this COVID [coronavirus disease] pandemic, with Operation Warp Speed, what DOD, in collaboration with DHS [Department of Homeland Security], has been able to do. I am interested to know what lessons we have learned from that; how we are going to perpetuate that going forward, so that we can be prepared for future things.

And then, also, as we deal with adversaries like Russia and China, where the companies are either state-owned, or at least sponsored, and there is that collaborative effort just by design of how their governments function, they are working together in a lot of cross-purpose-type technologies. How are we, and how could we better, work with not only our other government agencies, like DHS, but on the civilian side with our pharmaceutical companies, with our biomedical research? What are we doing to get better at that?

Dr. PLUMB. Thanks, Congressman.

On the first part of your question about how the pandemic has given us some lessons learned, I think on the highest level the takeaway is the Department can't afford to think about biothreats as a nation-state battlefield weapon, and has to include pandemic preparedness, as well as specific agent design preparedness. And so, the bio posture review that we are undertaking, Biodefense Posture Review, is looking at this from a whole spectrum, to include that part. And I think that is a big lesson that we have all—I don't know if it is learned or relearned.

Ms. ROSENBLUM. Yes, what I would just add to that, Congressman, is on the research, development, and acquisition side, one of the things that we are beginning to pivot away from is the focus on a singular agent, but, rather, the reality is that we are going to have to have more broad-spectrum kinds of both drugs as well as vaccines. And our continuous consultation, certainly, with the pharmaceutical industry is helping us with that. And I can go into further detail in the closed session as well.

Mr. FRANKLIN. Right. Thank you. And I yield back.

Mr. GALLEGU. Representative Murphy.

Mrs. MURPHY. Thank you, Mr. Chairman.

And thank you to everyone for being here with us. I look forward to the closed session as well.

But I will just start with Admiral Green. Can you talk a little bit about how you are leveraging American innovation and small businesses to help assist in the mission of countering weapons of mass destruction? And what particular tools have enabled you to leverage that innovation and work with small businesses?

Admiral GREEN. Yes, thanks for the question, and thanks for the conversation in your office.

I mentioned we have leveraged those authorities, I think, more effectively in the CT world, in the counterterrorism world. And they are there, and we need to aggressively work with industry and leverage those authorities when it comes to this problem set.

I would say that we have done some work with personal protective equipment that I can get into more detail in the classified ses-

sion, but that is one example of where I think we have worked with industry to increase our capability and to harden our operators.

I think Ms. Rosenblum—I think another area where I think it has a lot of promise is we have had an outside-in approach to protecting the operator—and I think she mentioned a little bit of an inside-out where we can protect with proven and tested pharmaceuticals to protect the operator. But I think those are areas where we can advance as well.

But I acknowledge that we have got to get a little bit more aggressive with the authorities that you have given us and to seek modernization in partnership with industry.

Ms. ROSENBLUM. If I may, Congresswoman, just to add that, working with small business is a very high priority for the administration, and we are very aware of the barriers to entry that that presents. And this is an area that we are trying to focus on, what the demand signal is from the Department, better understood by small business, and ways to more effectively integrate them into the advances that we are making to modernize against the whole WMD landscape.

Mrs. MURPHY. Great. Thank you for that.

You know, Admiral Green, I know that pathway defeat or collecting intelligence on the supply chains used to develop the new WMDs is a critical part of SOCOM's CWMD mission. Are the ISR [intelligence, surveillance, and reconnaissance] capabilities you need for successful pathway defeat sufficient? Are there specific deficits that we could address? And do you have the authorities you need to collect the necessary intelligence to complete your mission?

Admiral GREEN. Yes, again, thanks for that question, and I appreciate the dialog I had in your office, because I have thought about it since we had that discussion.

I think there is never enough ISR, but I think we have got to look at ISR, and my boss, frankly, he is looking at next-generation ISR and it involves open-source data, space, and cyber. And we may need to move away from reluctance on iron in airframes. But I think we have got to get creative.

But I also think our allies and partners, you know, they need to harden themselves, and us included, with regard to research that our near-peer competitors do, whether it is intellectual rights or whether it is supply chains. So, I think ISR is a broad term, but I think we all play a part, and our allies and partners really can help with that.

And we had a Five Eyes session in the last SLS which was extremely productive to listen to their thoughts and how we may be able to share intelligence better with them, so that we have a global look at this.

Mrs. MURPHY. And maybe, Ms. Rosenblum, you can follow up on that and talk a little bit about how you are coordinating with allies and partners on both understanding and countering WMD threats.

Ms. ROSENBLUM. Yes, thank you very much, Congresswoman, for that followup.

In the research, development, and acquisition area, we have a number of bilateral working groups that we have, particularly with the Canadians, the U.K. [United Kingdom], as well as Australia, to not only understand where they are with their science and tech-

nology, and as well as advanced development programs, but also where some of their areas of concern are, so that we are able to address that from a procurement, materiel, medical counter-measures approach.

Mrs. MURPHY. Thank you very much, and I yield back.

Mr. GALLEG0. Representative Lamborn.

Mr. LAMBORN. Thank you, Mr. Chairman.

Secretary Rosenblum, I am going to ask you in a minute about the Wuhan Virological Institute in China. But, first, let me quote three sentences from your written statement.

"The Department of State's April 2021 Compliance Report voiced grave concerns about China, Iran, North Korea, and Russia's compliance with the Biological Weapons and Toxins Convention. The report assessed that both North Korea and Russia have offensive biological weapons programs. Additionally, the activities of China and Iran raise concerns about compliance. Chinese publications have described biology and biotechnology as a new domain of warfare and cite the aspiration to make China the world leader in genetic engineering, precision medicine, and brain sciences, among other scientific disciplines."

So, we have heard so much from different directions about the Wuhan Virological Institute. Was that any part of the Chinese effort, as you quote, to become preeminent in what they view as a possible new domain of warfare, biology and biotechnology?

Ms. ROSENBLUM. Yes, thank you very much, Congressman, for that question.

My statement was oriented on their approach much more broadly than what they may or may not be doing in Wuhan Institute. They have a premier biotechnology economy that they are continuing to grow openly and commercially with investments both in the United States as well as globally. So, my comments were not restricted just to what may or may not be going on in Wuhan.

Mr. LAMBORN. Okay. To drill down on that just a little bit more, though, I have heard reports that they were engaged in gain-of-function research, which, to me, I don't see any good that can come out of that. It takes viruses and makes them more transmissible or more deadly. Do you have any view or comment on that?

Ms. ROSENBLUM. You know, with respect to whether gain-of-function research, which I am, in general, very familiar with in terms of its role in vaccines, related to Wuhan, I would want to take that as a question for the record.

One other thing that I would like to explore is that there have been some concerns or questions about whether DTRA funding or other funding at the Department of Defense was used in support of the Wuhan Institute. And we took a hard look at that, and to my knowledge, there was no DOD funding provided to Wuhan Institute.

Mr. LAMBORN. Okay. I am glad to clarify that.

And lastly, are you involved in any other research concerning the possible connection of the origins of COVID to the Wuhan Virological Institute?

Ms. ROSENBLUM. I am not.

Mr. LAMBORN. Okay. Admiral Green, I would like to ask you a question on a different subject. As you know, the administration

has decided to cancel and defund the nuclear capabilities, including the SLCM-N and the B83. Do you agree with that decision? Do you think that that was in accordance with your best military advice?

Admiral GREEN. I will ask one of my colleagues to potentially comment on that. I am not familiar. I can take it for the record.

Mr. LAMBORN. Okay. I guess, in SOCOM, maybe that wasn't your—I mean, these are Navy; one of those was a Navy program, but I thought, with your SOCOM role, you may or may not have familiarity with that.

So, with that, given the fact that you have said that, I won't pursue any more on that issue.

And, Mr. Chairman, I yield back.

Mr. GALLEG0. Well, thank you very much.

Votes are about to be called right now, or at least in the next 10 minutes. So, what I propose, unless there are any other questions, is that we close this formal session, and then, we restart in the classified session after votes are called.

Thanks then. Thank you, and thank you to the witnesses.

[Whereupon, at 10:59 a.m., the subcommittee proceeded in closed session.]

A P P E N D I X

APRIL 1, 2022

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 1, 2022

Opening Statement
Chairman Ruben Gallego
Subcommittee on Intelligence and Special Operations
Review Department of Defense Strategy, Policy, and Programs for
Countering Weapons of Mass Destruction for Fiscal Year 2023
April 1, 2022 – 10:00 AM

Good morning.

I'd like to thank our witnesses for joining us today:

- Dr. Deborah Rosenblum, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Threats Program,
- Dr. John Plumb, Assistant Secretary of Defense for Space Policy,
- Vice Admiral Collin Green, Deputy Commander, U.S. Special Operations Command, and
- Dr. Rhys Williams, Acting Director, Defense Threat Reduction Agency.

We appreciate your leadership and service to the nation at this critical time in global security.

The erosion of international norms regarding the use of chemical and biological weapons, coupled with emerging technology that creates the ability to weaponize synthetic drugs, requires us to think about weapons of mass destruction in new ways.

While the United States is in full compliance with its obligations under both the Biological Weapons Convention and the Chemical Weapons Convention, Russia and North Korea, according to the Department of State's 2021 compliance report, both maintain offensive biological weapons programs. And both have used such weapons against political opponents with near impunity.

Vladimir Putin uses WMDs and the threat of WMDs to inflict terror on populations, as is happening right now in Ukraine and Europe. Russia is promoting dangerous disinformation, which falsely claims that the U.S. is secretly developing biological weapons in a Ukrainian laboratory – This effort appears to be part of Putin's plan to keep the door open to employing Russia's own illegal biological or chemical weapons in Ukraine through a false-flag operation.

Today I am interested in our witnesses assessing how the fundamental changes to the security environment in Europe are altering how we think about and plan to deter, detect, and mitigate threats from WMDs, and to what extent this planning is reflected in DOD's budget request.

I am also interested in hearing about the progress toward the destruction of the remaining stockpile of lethal chemical agents and munitions, as required by the Chemical Weapons Convention deadline of September 30, 2023, and the congressionally-mandated deadline of December 31, 2023. I know the Department has been working tirelessly to ensure those obligations are met.

Dr. Rosenblum and Dr. Plumb, I understand you are co-leading the first ever Biodefense Posture Review. I appreciate the critical work you are doing in this area and look forward to hearing how that review is proceeding.

Finally, it is essential that we understand how all of this connects to the budget request.

I am pleased to see healthy increases across this portfolio, especially the Cooperative Threat Reduction Program, which, contrary to Putin's false propaganda, has been instrumental in dismantling weapons of mass destruction; and the Chemical and Biological Defense Program, with investments in vaccines and therapeutics.

I look forward to the discussion and will now recognize Ranking Member Kelly for his opening remarks.

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COMMITTEE

STATEMENT OF

MS. DEBORAH G. ROSENBLUM
ASSISTANT SECRETARY OF DEFENSE
NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

April 1, 2022

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 Department of Defense's (DoD) diverse workforce who comprise the United States' formidable countering 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 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 chemical and biological defense, along with nuclear weapons. 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. Our countering WMD mission has never been more important, not least because the operating environment continues to change rapidly due to science and technology advancements and disruptive actors' reduced threshold for CB weapon (CBW) use.

As we continue to see both within the Department and in our every-day lives, science and technology convergence is revolutionizing capabilities with potential dual-use applications and potentially unanticipated risks. Additionally, the Department's continued focus on peer competitors—including the People's Republic of China (PRC) and the Russian Federation—is changing our countering WMD paradigm. The President, Secretary of Defense Lloyd Austin, Congress, and our allies and partners are prioritizing our defensive capabilities to counter and deter the growing WMD threat, especially with regards to biodefense. This prioritization is evident from the Interim National Security Strategic Guidance, Secretary Austin's Biodefense Vision Memo, numerous provisions in recent National Defense Authorization Acts, and in joint statements and agreements with many of our allies and partners. If we do not act now, foreign science and technology advancements will have a transformative effect thereby creating the potential for disruptive capabilities that undermine our Nation's deterrent. Despite these changes, our mission remains the same: to anticipate future threats and deliver capabilities that enable the Joint Force to fight and win in WMD-contested environments.

THREAT LANDSCAPE

In recent years, our adversaries have demonstrated the potential for CBW to achieve a broad range of effects, from assassinations to population-scale psychological impact. CBW can also be useful for anti-access/area-denial objectives by disrupting operational tempo and by contaminating areas—including logistics nodes—that the Joint Force would have to traverse to reach the fight. CBW could also be used to weaken or displace defensive forces thereby allowing adversaries to seize infrastructure, territory, or achieve a strategic advantage. Furthermore, these weapons can target specific military units or systems to take them out of the fight or reduce their effectiveness.

These threats are becoming exponentially more complex due to advances in science and technology. The Intelligence Community identifies the potentially threatening nature of bio-convergence, or the application of diverse sciences and technologies such as computational and cognitive science, nanotechnology, physics, and others, to the life sciences. Among other effects, bio-convergence has the potential to create seemingly infinite new biological threats, forcing the Department away from only relying on a definite list of known threat agents against which to develop countermeasures. Engineered biological weapons may have the capability to evade medical countermeasures and physical defenses, as well as increase virulence and transmissibility, making them more appealing for potential use against the United States. Not only does the Department recognize the threat these agents pose to the United States and the warfighter, but the adversaries we face continue to see strategic and tactical advantage-gaining opportunities from developing and employing these devastating weapons.

Of particular concern, new threats could have significant and tailorable delay between application and effect, challenging our ability to forecast their impact on the Joint Force and attribute origin. Accordingly, our deterrence and defensive posture must prepare for and respond to the full spectrum of biological threats, whether naturally occurring, accidental, or deliberate. New science and technology developments are allowing adversaries to create viable CB threats without the large-scale industrial production facilities or delivery systems previously required. This both challenges U.S. detection capabilities and makes it easier for new actors to acquire these weapons. The Department must also consider how these weapons can be used in

conjunction with other emerging domains of warfare, such as information and disinformation operations, which we see our adversaries using with increasing frequency.

In addition to the challenges arising from science and technology advancements, foreign actors continue to challenge international norms and agreements that prevent the development and use of chemical and biological weapons. The Department of State's April 2021 Compliance Report voiced grave concerns about China, Iran, North Korea, and Russia's compliance with the Biological Weapons and Toxins Convention. The report assessed that both North Korea and Russia have offensive biological weapons programs. Additionally, the activities of China and Iran raise concerns about compliance. Chinese publications have described biology and biotechnology as a new domain of warfare and cite the aspiration to make China the world leader in genetic engineering, precision-medicine, and brain sciences, among other scientific disciplines. We need to think more holistically about biological threats as our adversaries can rapidly weaponize dual-use science and technology activities conducted under legitimate auspices.

Finally, instead of developing WMDs to fill immediate tactical or operational gaps, foreign actors see chemical and biological weapons as an asymmetric advantage and relish their potential deterrent effect. These unique strategic effects, coupled with challenges to global norms regarding chemical and biological weapons, present a growing threat to the United States. We must be sure our adversaries understand the strength of our defensive capabilities and the severe price they will pay for using chemical or biological weapons.

MEETING THE NEW THREAT LANDSCAPE

To achieve our mission, the Department is responding to the emerging threat landscape in how we deter and defend against WMD threats. I want to be clear, if our Department's approach doesn't adapt to the emerging threat landscape, we will be accepting irreversible risk to the Nation and our Joint Force.

Therefore, the Department must strengthen its science and technology (S&T) advantage through bolder acquisition approaches. For instance, incremental cycles of research and development must be replaced by investments designed to drive groundbreaking innovations. In turn, S&T

must shape and inform the Department's operating concepts. Recently, the Department has combined off-the-shelf wearable technologies with artificial intelligence machine-learning (AI/ML) tools to better assess physiological impacts and changes to the warfighter, thereby providing both early warning and on-the-spot, real-time diagnostics.

We also need to drive innovation by championing research, science, technology, and engineering. This includes nurturing early research and investing in potential scientific breakthroughs to prevent technological surprise. Our investments must introduce new elements that complicate our adversaries' offensive investments, approaches, and decision-making calculus. The Department must also expand its chemical and biological defense industrial base by seeking out partnerships with small businesses, new entrants, and international partners. Furthermore, the Department needs to become a trusted partner to industry by communicating stable, long-term requirements to that take advantage of the private sector's full potential.

Inside the Department, we must also change how we think about and plan for biological threats. As Secretary Austin said in his Biodefense Vision Memorandum, biodefense is a responsibility of the entire Department. It must be a part of everything we do, similar to the Department's approach to artificial intelligence and cyber. As the Department bolsters its deterrent capabilities, nuclear weapons will continue to provide unique deterrence effects that no other element of U.S. military power can replace at this time, and the nuclear mission remains indispensable to our national security. At the same time, improved chemical and biological defense capabilities will contribute to our Nation's integrated deterrence by denying the adversary any advantage of using these weapons. Speaking broadly, our programs are focused in three main areas: understanding the threat, protecting the Joint Force, and mitigating any effect of CBW. The interaction between understand, protect, and mitigate enhances our ability to deter and defeat WMD usage by providing an integrated layered defense approach. This layered approach helps us guard against being defeated by single points of failure. For instance, with better PPE or preventive medical countermeasures, we are better positioned to overcome a failure in early warning. Similarly, early diagnosis and effective therapeutics can help us bridge the gap until a vaccine is ready.

Along with these overarching capabilities, we are focused more specifically in a number of key areas to stay ahead of the rapidly changing threat landscape.

The first key area is integrated early warning systems. We continue to see how biological threats can circumvent traditional concepts of biological detection systems. We need to change the paradigm by integrating all available sensors and data collection as a network of networks to identify changes within an environment rather than waiting for the onset of symptoms after a warfighter has already been exposed to an agent. Surveillance will also be enhanced by using assets such as thermal imaging to identify environmental changes that signal possible chemical and biological contamination.

We are also focused on deploying more CB sensors and detection systems while reducing the Joint Force's logistical burden. We may be able to accomplish this objective through wearable technology, placing CB sensors on existing weapon systems and unmanned systems, satellite imagery, and fixed-point intelligence collection nodes. In order to warn the Joint Force of a possible contamination, the Department is developing systems that will harness artificial intelligence and machine learning tools to automatically fuse data into centralized command and control systems that provide near real-time information to the Joint Force.

Although we are making significant progress, the complex, ever-changing nature of CBW threatens our ability to rely on early warning and physical protection capabilities. A second key area we are exploring is the concept of defending from within through preventive and post-exposure medical countermeasures. We must think differently about how we protect the warfighter from within and prevent the negative effects of agents. The Department is looking at how the body responds to agents, and further how we can then train our immune systems to protect the body instead of the traditional reliance of creating physical barriers. Another concept the Department has begun implementing is repurposing medications that have already been produced and proven effective against one threat to potentially serve as medical countermeasures for other threats that share similar attributes. Before the pandemic, the Chemical and Biological Defense Program validated this approach by investing in *remdesivir* as a medical countermeasure against filo virus biological threats. Within three months of the first known case of SARS-CoV-2, the CBDP partnered with the Department of Health and Human Services to repurpose *remdesivir* as a medical countermeasure against SARS-CoV-2. This is yet another example of

how the CBDP is able to apply its transformative research and development efforts to solve national and even international biological threats by developing medical countermeasures with potential repurposing opportunities.

Even if we achieve the concept of defending from within, a third key area is protecting our infrastructure, vehicles, and warfighter against CB agents. For the foreseeable future, physical protection will continue to be a key part of our defense against CB threats, and we are working to enhance protection while reducing the burden to the warfighter. For instance, we are replacing heavy, bulky, and extremely hot individual protective equipment with smaller, lighter, and form-fitting PPE that will not reduce the warfighter's effectiveness or the Joint Force's operational tempo. The CBDP is also researching novel types of materials and responsive technologies to create protective ensembles that can adapt to unknown threats and contaminated environments. Ultimately, we want protective equipment that provides protection against a broad array of chemical and biological threats without impacting mission performance. Similarly, we are moving away from traditional decontamination methods that rely on abundant water supplies. For instance, one novel approach the Department is developing decontaminates the interior of an aircraft by filling it with extremely hot air to disinfect any lingering pathogens or agents.

A WHOLE OF DEPARTMENT APPROACH

For the first time, Secretary Austin has ordered a Department-wide Biodefense Posture Review (BPR), which is co-chaired by the Assistant Secretaries from the offices of the Under Secretaries from Acquisition & Sustainment and Policy. To meet Secretary Austin's objectives, we are assessing roles, responsibilities and authorities for biodefense, identifying gaps, and making recommendations to strengthen DOD's biodefense posture against the entire spectrum of biological threats, whether natural, accidental, or deliberate.

Although this review is ongoing, it is being guided by three principles. First, unify efforts through an empowered, collaborative, and integrated approach to biodefense across the Department. Second, modernize DOD operations to optimize capabilities, capacity, resilience, and readiness. Third, synchronize biodefense planning with the new National Defense Strategy, the interagency, and allies and partners to support biodefense efforts in alignment with national

goals and strategy. Therefore, the BPR is examining how the Department can, and should, support other U.S. departments and agencies to deter deliberate biological attacks and respond to natural and accidental incidents. The review will inform biodefense-related operations, activities, and investments to support force protection, research and development, capability acquisition, and required Departmental expertise.

EXPANDING PARTNERSHIPS

As President Biden and Secretary Austin have underscored, we cannot achieve our mission without closely collaborating with other departments and agencies, as well as our like-minded allies and partners. Put simply, countering WMDs is a whole-of-government and global effort. The Department can leverage investments and capabilities from other partners, but the Department can also reinforce the efforts of others. Our chemical demilitarization program is an excellent example of this partnership. I'm proud to report we have destroyed 98% chemical agents from the U.S. chemical weapon stockpile and are on track to complete the destruction of the entire United States' legacy chemical weapons stockpile by the planned completion date of September 2023. Our progress in turn supports the United States' commitment to arms control.

Most importantly, the United States' network of allies and partners are essential in everything we do, from addressing chemical and biological threats to preventing the proliferation of WMDs. As the Department continues to develop advanced chemical and biological defense capabilities, we must develop a common understanding with our allies and partners on the concepts and capabilities needed for CBD. cannot outpace our allies and partners' concepts and capabilities. The Department of Defense Cooperative Threat Reduction (CTR) Program's Biological Threat Reduction Program provides layered, networked defense capabilities by strengthening our partners' capacity to detect and diagnose diseases and report outbreaks to appropriate international health agencies. Furthermore, the Department's Chemical and Biological Defense Program works especially closely with allies and partners. Through jointly funded research and development or information sharing agreements, our allies and partners are essential collaborators for early warning, detection, physical protection, and medical countermeasure development programs.

CONCLUSION

In conclusion, I'm extremely grateful for the sustained and growing interest among the committee and across the legislative branch. The threat we face as a Nation cannot be understated. In order for the Department to best serve the Joint Force, we must invest now in transformative research and development programs to get the best possible capabilities into the field to protect the warfighter. The Department must also remain an active partner to industry, our allies and partners, and to all branches of the U.S. government. Within the first year of my tenure as the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense, I have seen the tremendous contributions our workforce has made to our shared mission. I pledge to the Committee and to our incredible defense enterprise, we will support the warfighter and the Nation to defend against any weapon of mass destruction threat we face. Furthermore, as these threats evolve, I will work closely with the committee to ensure our partners in Congress are well informed on the capability development programs we seek to pursue. On behalf of the entire nuclear, chemical, and biological defense enterprise, I thank each of you for your continued and strong support to our goal of preparing for, deterring, and mitigating current and future weapons of mass destruction threats. Thank you for your time today, I look forward to your questions.

Deborah G. Rosenblum

Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ASD(NCB)), and Performing the Duties of Assistant Secretary of Defense for Industrial Base Policy (ASD(IBP))

Ms. Deborah G. Rosenblum currently serves as the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (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 weapons, nuclear energy, and biological and chemical programs.

She is also currently performing the duties of the Assistant Secretary of Defense for Industrial Base Policy, serving as the principal advisor to the Secretary, Deputy Secretary, and Under Secretary of Defense for Acquisition and Sustainment (A&S) on industrial base policies. Her principal duty is the overall supervision of the Department of Defense's efforts to develop and maintain the defense industrial base of the United States to ensure a secure supply of materials critical to national security.

Prior to her position as Assistant Secretary of Defense, she was the Executive Vice President at the Nuclear Threat Initiative (NTI). As part of NTI's executive leadership team, she helped to oversee the organization's operations, development, and programs, managing an annual operating budget of \$15-20 million.

At NTI, Rosenblum led the successful development of Connecting Organizations for Regional Disease Surveillance (CORDS) as an independent, self-sustaining global network of regional disease surveillance groups. She served on the board of CORDS, where she promoted good governance in her role as finance chair. Rosenblum also helped manage NTI's work on security issues related to China and regularly travelled there to meet with government officials and non-governmental organizations. Additionally, she led NTI's Middle Eastern partnerships, with a focus on the Levant region, where she travelled frequently for programmatic work as well as speaking engagements on behalf of NTI. Rosenblum has served on the board of the Herbert Scoville Jr. Peace Fellowship since 2012. From 2017 to 2018, Rosenblum served as an N Square fellow focused on driving innovation in the nuclear field. Now, she currently serves as an advisor to the fellowship program.

Rosenblum spent seven years as vice president of The Cohen Group, an international consulting firm. She served in senior positions with the U.S. Department of Defense, in the areas of homeland defense, peacekeeping operations and support, nuclear forces, and counter-proliferation policy. Rosenblum represented the United States as a negotiator with the Democratic People's Republic of Korea on multi-year bilateral negotiations around its nuclear program. Rosenblum holds a master's degree from Columbia University's School of International and Public Affairs, and is a Phi Beta Kappa graduate with a bachelor's degree from Middlebury College. She is fluent in French.

STATEMENT OF
DR. JOHN F. PLUMB
ASSISTANT SECRETARY OF DEFENSE FOR SPACE POLICY
BEFORE THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS
April 1, 2022

INTRODUCTION

Chairman Gallego, Ranking Member Kelly, distinguished members of the Subcommittee, thank you for inviting me to testify on the Department of Defense's (DoD) efforts to counter weapons of mass destruction (CWMD) alongside Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense, Deborah Rosenblum; Acting Director of the Defense Threat Reduction Agency, Dr. Rhys Williams; and Deputy Commander of the U.S. Special Operations Command, Vice Admiral Collin Green. I would also like to express my appreciation for the strong support Congress provides the Department. My years in the military as well as working in the Pentagon, the White House, and here on the Hill, have given me a deep appreciation for the importance of close collaboration between the executive and legislative branches in order to protect the security of the American people by ensuring our armed forces have the resources and authorities required to deter, and if necessary, defeat any foe.

The DoD CWMD Enterprise's mission is to dissuade, deter, and, when necessary, defeat actors who use or threaten to use WMD against the United States and our interests. Accomplishing this mission requires that the DoD CWMD Enterprise constantly evolve to maintain the capability to respond to and mitigate the effects of WMD use in a continuously shifting threat environment. Russia's further invasion of Ukraine has featured Russian nuclear saber-rattling and firefights at nuclear power facilities, underlining the importance of the CWMD mission in the current geopolitical environment.

The President's Interim National Security Strategic Guidance emphasizes the importance of collective action to meet today's threats, which respect no borders. This is particularly true of WMD threats, including the proliferation of nuclear weapons and other weapons of mass destruction, pandemics and other biological risks, and the efforts of violent extremist

organizations to acquire and use WMD—all of which pose profound and, in some cases, existential dangers. While these threats cannot be met by any one nation acting alone, they do require American leadership and partnership.

Across all WMD threats, this Administration has successfully cultivated increased alignment and cooperation with our allies and partners in managing, mitigating, and reducing the danger posed by WMD. We stand shoulder-to-shoulder with our allies and partners in Europe and the Indo-Pacific region to meet a range of threats including nuclear proliferation, the use of traditional and next-generation chemical weapons, and emerging and persistent biological threats.

THE DEPARTMENT'S RESPONSE TO WMD CHALLENGES

The Department's response to WMD threats are organized under three lines of effort that span the CWMD mission spectrum: prevent acquisition, contain and reduce threats, and respond to crises. As global WMD threats continue to evolve and become more sophisticated, strong collaboration across the DoD's CWMD enterprise and with interagency partners remains essential to carrying out effective activities under these lines of effort.

To improve efficiency within the DoD CWMD enterprise, the Department established the DoD Countering Weapons of Mass Destruction-Unity of Effort (CWMD-UoE) Council in 2018. This body leverages existing processes and systems across the Department to share information, improve cooperation, identify issues, generate solutions, and determine actions that are required to meet CWMD policy and strategic goals. Through the CWMD-UoE Council, we are tackling some of the Department's most challenging CWMD issues, such as addressing chemical, biological, radiological, and nuclear (CBRN)-readiness, to advance defense strategic objectives. In January 2021, the then-acting Secretary approved the Department's first list of CWMD

priorities as produced by the CWMD-UoE Council. These priorities are designed to align our CWMD resources and efforts around the gravest WMD threats to the nation and to the Joint Force.

The Department is working tirelessly to strengthen the capability 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 on a contaminated battlefield. This is important not only for responding to CBRN crises, but also for deterrence: signaling to adversaries that using WMD against U.S. and/or allied or partner forces will not help adversaries 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 Indo-Pacific allies and partners to develop interoperable capabilities and to encourage burden sharing through allies' and partners' own development of robust CBRN defense capabilities. We also utilize security cooperation authorities to help allies and close partners build CBRN defense capabilities necessary to operate alongside U.S. forces.

The Department is prioritizing the improvement of CBRN defense training and exercises, capabilities, personnel, and equipment in Europe and in the Indo-Pacific region (including the Korean Peninsula) and is working with our allies and partners to share the burden of CBRN defense through their own development of robust capabilities. As part of our budget request we are asking for \$629.9M to help bolster U.S. European Command's CBRN defense capabilities and equipment. As we've learned during the last few weeks, this is an immediate priority we must address. These efforts send a signal to threat actors that aggression using WMD will fail.

The Proliferation Security Initiative (PSI) is a global effort that aims to stop the trafficking of WMD, their delivery systems, and related materials to and from States and non-

state actors of proliferation concern. During the pandemic environment, the Department, in close collaboration with the Department of State, has sustained and advanced PSI objectives via virtual meetings and by embedding PSI into dialogues with foreign partners. U.S. Indo-Pacific Command will host this year's Asia Pacific Exercise Rotation event, FORTUNE GUARD 22, which we are planning to execute this August as an in-person event in Honolulu, Hawaii.

The Department continues to spearhead the Pacific Security Maritime Exchange (PSMX), in which we are joined by eight other countries—Australia, Canada, France, Germany, Japan, New Zealand, the Republic of Korea, and the United Kingdom—to meaningfully enforce Democratic People's Republic of Korea (DPRK)-related UN Security Council Resolutions, particularly preventing North Korea from receiving illicit refined petroleum and helping to deny North Korea revenue from illicit sources for use in advancing its WMD and missile programs. Multinational enforcement operations such as those conducted by PSMX's Enforcement Coordination Cell raise the costs on North Korea's smuggling activities.

The DoD Cooperative Threat Reduction (CTR) Program has adapted to the changing WMD threat landscape and is now active in more than 30 countries worldwide, working with partners to reduce the risk of WMD proliferation and use across the CBRN spectrum. 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 DoD CTR Program are a result of the continuing partnership and support of Congress. Looking ahead, the DoD CTR program is undertaking a strategic review to identify how it must adapt to prevent or mitigate future outbreaks of deadly disease and to promote U.S. security in a world in which adversarial States pose an increasing threat to U.S. interests and who

often pursue WMD capabilities to offset U.S. conventional advantages. I look forward to discussing the outcome of the review with this Subcommittee in the future.

The Department finalized the 2022 National Defense Strategy (NDS), which details the Department's strategic approach for advancing our defense priorities in support of the National Security Strategy. A core concept of the NDS is integrated deterrence, which provides a framework for working seamlessly to strengthen deterrence across warfighting domains, theaters, and the spectrum of conflict, in close collaboration with the U.S. interagency and Allies and partners. This includes taking steps to deny the benefits of competitors acquiring and using chemical, biological, radiological, and nuclear weapons. In keeping with this approach, the 2022 Nuclear Posture Review (NPR) and 2022 Missile Defense Review (MDR) are nested with the NDS. The classified NPR and MDR reports were transmitted to Congress on March 28, and release of the unclassified NPR and MDR is forthcoming.

As this committee understands, we face a profoundly changed international security environment across all domains, including WMDs. It is with this in mind that DoD has decided to update the Department's 2014 CWMD strategy. While the strategy has proved useful and enduring, it is reflective of the paradigms of that era. As such, it does not adequately account for the WMD risks and challenges posed by the increasing role of strategic competition in global affairs, something the conflict in Ukraine has highlighted all too clearly. My team has just begun the effort reshape the department's CWMD guidance with this new reality in mind. I would be happy to provide the committee with a briefing once our work is complete.

The Department has also initiated a first-ever Biodefense Posture Review to address biological threats, whether naturally occurring, accidentally released, or part of a deliberate attack. This review intends to unify the Department in addressing future biological threats and,

in the near-term, incorporate lessons learned from the COVID-19 pandemic. The review will also assess our ability to successfully fulfill our role in national defense, including the ability to operate in a biologically challenged environment. We expect completion of the report by mid-summer.

THREAT ENVIRONMENT

Secretary Austin has continued to emphasize that China is the Department's pacing challenge, and this includes concerning developments in the WMD space. China is dramatically expanding its nuclear arsenal and delivery systems with intentions that remain opaque. As noted in the 2021 China Military Power Report, the accelerating pace of the People's Republic of China's (PRC's) nuclear expansion may enable the PRC to have up to 700 deliverable nuclear warheads by 2027. The PRC likely intends to have at least 1,000 warheads by 2030. China is supporting this expansion by constructing fast breeder reactors and reprocessing facilities that will increase its capacity to produce and separate plutonium.

Despite China's status as a State Party to the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), the United States continues to note the concerns captured in the 2021 Department of State Compliance Reports and the 2021 China Military Power Report. China has engaged in activities with potential dual-use applications, which raise concerns regarding compliance with Article I of the BWC. In particular, these reports note studies conducted at People's Liberation Army (PLA) medical institutions that included identifying, testing, and characterizing diverse families of potent toxins with dual-use applications. 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 BWC. Moreover, the United States cannot certify that China has met its

obligations under the CWC due to concerns regarding Chinese research on dual-use pharmaceutical-based agents (PBA) and toxins.

China is pursuing a Military-Civil Fusion Development Strategy that leverages civilian scientific and technological advancements for military end-uses. We have particular concern that, in keeping with this strategy, China seeks to acquire advanced equipment, components, technology, and know-how from the United States and our partners and allies for use in advancing China's nuclear and other strategic military programs. Chinese entities 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.

At the same time, Russia continues to expand its WMD and associated delivery system programs, which are of increased concern given its ongoing invasion of Ukraine, which has destabilized the post-WWII European security environment. Russia is investing substantial resources in expanding its strategic and non-strategic nuclear capabilities across all legs of its triad.

In the chemical and biological weapons space, the United States assesses that Russia maintains an offensive biological weapons program in violation of its obligations under Articles I and II of the BWC, and has certified Russia's non-compliance with the CWC for its employment of Novichok nerve agents in assassination attempts against Sergei Skripal (2018 in the United Kingdom) and Aleksey Navalny (2020 in Russia). These attacks make clear that Russia retains an undeclared chemical weapons program and is willing to use these weapons. Russia also continues to prop up the Assad regime, despite its use of chemical weapons against

its citizens on at least 50 validated occasions. Finally, we continue to have concerns about Russian PBA programs and their intended purposes.

Russia has manufactured false claims of Ukrainian and U.S. attempts to develop and use chemical or biological weapons in an attempt to justify its war of choice in Ukraine. This is not the first time Russia has invented such false claims against another country, and they have been debunked conclusively and repeatedly over many years. The reality is there are no Ukrainian biological weapons labs, and the United States does not support the development of biological weapons in Ukraine or anywhere else in the world.

DoD participates in a wider international partnership that includes international organizations, such as the World Health Organization, the Organization for Security and Cooperation in Europe, and other foreign partners to improve Ukraine's ability to safely and effectively detect and report disease outbreaks. This partnership has improved the capacity of Ukrainian health labs to detect and diagnose diseases, including pandemics like COVID-19. Any suggestion of a connection between this important public health effort and biological weapons is malicious fabrication.

North Korea's unlawful WMD and ballistic missile programs constitute a serious threat to the United States and our allies and partners. The DPRK is undertaking increasingly dangerous provocations, including a series of short-and long-range missile tests that began in September 2021 and have continued into 2022. The United States assesses that North Korea possesses an offensive biological warfare program intended to counter U.S. and South Korean military superiority. The Department supports the Administration's calibrated, practical approach in coordination with our allies and partners that is open to exploring diplomacy with

the DPRK. The intent is to make tangible progress that increases the security of the United States, our allies and partners, and our deployed forces.

Given the risk that the DPRK 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 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.

We are deeply concerned by Iran's nuclear advances since it began ceasing performance of its Joint Comprehensive Plan of Action (JCPOA) commitments in 2019, and we remain committed to preventing Iran from acquiring a nuclear weapon. The Department supports the President's prioritization of diplomacy as the preferred course of action to constrain and roll back Iran's nuclear program, but retains credible military options should the President request them. The Intelligence Community continues to assess that Iran is not undertaking the key nuclear weapons-development activities that it assesses would be necessary to produce a nuclear device, although its pursuit of higher levels of uranium enrichment is a concern. The United States has also certified Iran in non-compliance with the CWC. The United States has concerns that Iran is developing agents intended to incapacitate for offensive purposes and that it did not declare all of its traditional chemical weapons agent capabilities when it ratified the CWC. We also remain concerned that Iran has not abandoned its intent to conduct research and development of biological agents and toxins for offensive purposes.

Syria has used chemical weapons dozens of 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, to suspend Syria's rights and privileges under the CWC.

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 a crude WMD is a particular concern. Given safe harbor and access to knowledge, skills, and materials, VEOs still pose a WMD threat to the United States, to our allies and partners, and to U.S. interests. We must work tirelessly to deny VEO's the safe havens they need to create such devices, and work with allies and partners to limit access to knowledge and materials.

As highlighted in last year's posture testimony, we continue to carefully watch advances in the biotechnology field that pose both promise and risk for U.S. national security and for DoD in particular. As biotechnology and biomanufacturing advance, we have genuine opportunities to leverage these and other critical capabilities (such as artificial intelligence and additive manufacturing) to revolutionize healthcare, enable the fight against climate change, build the American bioeconomy, and support resilient supply chains. At the same time, there is a growing risk of these innovations being misused by adversaries to develop advanced biological weapons and to enable other advanced military capabilities. China's Military-Civil Fusion policy includes leveraging biotechnology advances for military purposes. Meanwhile, the rapid growth in the fields of genomics—that has such promise for medical and scientific development also means growing databases of sensitive biological data. It is essential that the United States prioritize efforts to protect and secure biotechnological data, innovations, and capabilities against exploitation by adversaries.

These CWMD threats are persistent and managing and reducing them requires a whole-of-government response. I would like to highlight some emerging trends in the CWMD threat environment.

EMERGING TRENDS

The Administration's efforts to revitalize our alliances and partnerships are paying off in the CWMD space. We see increased alignment across WMD threats with our allies and partners, strengthening our position as we work to reduce and mitigate these threats. China, Russia, DPRK, and Iran are all confronting an increasingly unified world actively opposing their efforts to produce, proliferate, or leverage WMDs for political gain.

Just last week, NATO Allies spoke with one voice in responding to the threat from Russian WMD. NATO Allies are working to improve the readiness of their CBRN defense capabilities and deploying additional CBRN defense forces to reinforce NATO's Battle Groups. NATO has activated its CBRN defense elements to improve our warning, technical support and cooperation, and increase the readiness of NATO's Combined Joint CBRN Defense Task Force, and NATO Allies are working to help Ukraine detect, identify, and respond to CBRN threats.

Separately, disinformation is now pervasive across the security landscape including in WMD issues. As an example, the DoD CTR Program, which is working to help partner countries upgrade their public and animal health detection, diagnostic, safety, and security capacity, has been targeted by Russian propaganda. These investments in improving public health capabilities in Eastern Europe, the South Caucasus, and central Asia demonstrated their worth during the ongoing pandemic, resulting in enhanced diagnostic capacity and response to COVID-19 that saved lives. The laboratory upgrades and training the United States provided to Ukraine, Georgia, Kazakhstan, and other partner countries, are a frequent target of unscrupulous

and baseless Russian disinformation campaigns claiming that the United States is developing biological weapons that are killing people in partner countries. These are outright lies, designed to drive a wedge between the successful biological threat reduction efforts of the United States and its partner countries and to justify Russia's unprovoked and unjustified further invasion of Ukraine.

CONCLUSION

Chairman Gallego, Ranking Member Kelly, and Members of the Subcommittee, thank you for the opportunity to testify today on the effort of Department of Defense's CWMD Enterprise. The threat landscape is changing as State adversaries such as China and Russia grow increasingly assertive and willing to risk confrontation. We are adapting to ensure we are prepared to meet the threats of tomorrow alongside our crucial allies and partners. We look forward to continuing the conversation with this Subcommittee on the threat environment and how DoD must adapt. Thank you for your continued commitment to and support of the CWMD mission.

Dr. John F. Plumb
Assistant Secretary of Defense for Space Policy

Dr. John F. Plumb was confirmed in March 2022 as the first Assistant Secretary of Defense for Space Policy. In this role he is responsible for the overall supervision of policy for the Department of Defense for space warfighting. His policy portfolio encompasses the Department's strategic capabilities for integrated deterrence: space, nuclear weapons, cyber, missile defense, electromagnetic warfare, and countering weapons of mass destruction. He also serves as the Principal Cyber Advisor to the Secretary of Defense.

Dr. Plumb has served in various national security roles both in and out of uniform for nearly three decades. As an active duty US Navy submarine officer, he served on a fast attack Los Angeles- class submarine and as an instructor at the Navy's nuclear power school. He then transitioned to the Navy reserves, commanding eight different reserve units over 20 years. As a civilian he held previous roles in the Senate, the Pentagon, and on the National Security Council staff at the White House. Prior to his confirmation he spent several years working for Federally Funded Research and Development Centers, first as a Senior Engineer at the Rand Corporation, and then as Principal Director, Chief of Government Relations for the Aerospace Corporation.

He holds a B.S. in Physics from the University of Notre Dame, and an M.S. in Physics and Ph.D. in Aerospace Engineering from the University of Colorado. His academic awards include the University of Notre Dame Student Leadership Award and an American Association for the Advancement of Science (AAAS) Congressional Science & Technology Fellowship sponsored by the Institute of Navigation. His personal military decorations include the Legion of Merit, the Meritorious Service Medal, and the Navy Commendation Medal. His civil service awards include the Office of the Secretary of Defense Exceptional Public Service Award, the Department of State Superior Honor Award, and the Secretary of Energy Achievement Award.

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STATEMENT OF

VICE ADMIRAL COLLIN P. GREEN, U.S. NAVY
DEPUTY COMMANDER
UNITED STATES SPECIAL OPERATIONS COMMAND

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON INTELLIGENCE AND SPECIAL OPERATIONS

April 1, 2022

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Chairman Gallego, Ranking Member Kelly, and Members of the subcommittee, thank you for the opportunity to represent U.S. Special Operations Command (USSOCOM) today. On behalf of General Clarke, it is my privilege to join Mr. John Plumb, Ms. Deborah Rosenblum, and Dr. Rhys M. Williams at this hearing on how we work together to address some of our most critical national security challenges. These Department leaders are critical partners for USSOCOM in our Coordinating Authority (CA) 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 DoD and interagency, and with our allies and partner nations to counter threats from nuclear, biological, and chemical weapons. Today I will review USSOCOM's role, WMD challenges, summarize our work to counter them over the past year, and our priorities for the coming year.

DoD CWMD CA Role

The Unified Command Plan underscores USSOCOM's CA responsibility for planning DoD CWMD strategic efforts, integrating operational plans, and advancing intelligence priorities in support of the Combatant Commands and other U.S. Government agencies as directed by the Secretary. Working within national and DoD policy guidance, USSOCOM's J10 directorate, based both here in the National Capital Region and at USSOCOM Headquarters in Tampa, exercises our CA responsibilities and makes relevant recommendations to the Chairman of the Joint Chiefs of Staff and the Secretary of Defense. To accomplish this, we collaborate across DoD, with U.S. government agencies, and other relevant organizations.

USSOCOM has served in this role for over five years, and we implement a DoD-wide functional campaign plan (FCP) that supports National Security priorities. The FCP directs action to achieve CWMD objectives and enable the Joint Force to integrate DoD efforts with

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those of other U.S. government departments and agencies to counter regional and transregional WMD threats. We work with Combatant Commands to incorporate CWMD objectives into campaign and contingency planning and operations, activities, and investments (OAIs). By integrating key FCP concepts into military plans and doctrine, and campaign objectives into OAIs, we align the DoD OAIs across time horizons from strategy to current operations and evaluate the Department's collective results through the annual CWMD Assessment. We improve and refine collaborative processes, such as the CWMD Coordinating Authority Synchronization forum to advance understanding of the WMD threat, develop new OAIs and initiatives to mitigate strategic risk, and conduct in-situ assessments of the efficacy of our efforts. We will continue to assess capability gaps across the Joint Force and develop recommendations to improve readiness, resourcing, and force posture necessary to counter WMD effectively.

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 allies and partner nations. The DoD plays a unique and critical supporting role to our interagency colleagues, especially at the Departments of State, Energy, Treasury, Homeland Security, 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. Therefore, we coordinate across the DoD, with interagency colleagues, allies, and partner nations without whom achieving U.S. objectives would be nearly impossible.

We are advancing 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. We benefit from the Defense Counterproliferation

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Office's analytic and tradecraft proficiency, partner with the Defense Threat Reduction Agency (DTRA) for its technical expertise and maintain liaison officers at the Office of the Director of National Intelligence's (ODNI) National Counterproliferation Center and Office of the Under Secretary of Defense for Intelligence and Security to ensure close collaboration. We collaborate with the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense to explore cutting-edge technologies, material, and non-material solutions with unparalleled creativity.

WMD Challenges

The landscape of nuclear, chemical, and biological threats has continued to evolve over the past year. We closely monitor and analyze the progression of existing and potential WMD programs for state actors, Violent Extremist Organizations, and emerging technologies and threats, with essential support from the Defense Intelligence Agency.

The proliferation of dual-use, WMD-applicable goods, knowledge, and technology continues to present a direct threat to U.S. and allied interests by complicating U.S. force projection capabilities, countering Western missile defense systems, improving adversarial targeting capabilities, and expanding or sustaining WMD-related production capabilities. Procurement networks continue to acquire dual-use goods, materials, technologies, and expertise for WMD programs and delivery systems of certain countries of concern, such as China, Russia, Iran, and North Korea. Most networks remain resilient and adaptable despite international sanctions, export controls, and other prohibitions limiting the purchase or transfer of certain WMD-applicable goods to specific countries or entities. Most countries publicly desire to become self-sufficient in the domestic production of equipment and materials necessary to

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sustain or advance their WMD-related capabilities. If achieved, such domestic capabilities will challenge future counterproliferation opportunities.

Beijing is accelerating the modernization and expansion of its nuclear arsenal. The PRC is investing in, and expanding, the number of its land-, sea-, and air-based nuclear delivery platforms and constructing the infrastructure necessary to support this major expansion of its nuclear forces. China's continued implementation of conventional nuclear integration (CNI), i.e., placing nuclear capable weapons within conventional forces, remains a concern. 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 Weapons Convention (BWC). Also problematic are the People's Liberation Army (PLA) efforts to leverage bioscience, technology, and gene-editing innovations. China's civil-military fusion allows the PLA to gain access to our emerging technology, expertise, and mass genetic datasets through legitimate academic, research, and business ventures which increases the risk of U.S. genomic data and biotechnology being used to further China's military priorities. Lastly, the Chinese market remains the world's leading source of dual-use, WMD-applicable goods going to countries of concern.

Russia continues to increase its nuclear stockpile, with an emphasis on nonstrategic nuclear weapons and, like China, is implementing CNI and testing HGV. Russia's first hypersonic weapon, the Avangard, uses a glide vehicle to deliver a nuclear warhead. As detailed in the 2021 State Department Compliance Report, the United States found that Russia is in violation of its obligations under both the BWC and Chemical Weapons Convention (CWC).

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Russia also employed chemical weapons in two assassination attempts of Russian dissidents over the past four years, demonstrating an alarming willingness to use chemical weapons in small-scale operations.

The Intelligence Community continues to assess that Iran is not currently undertaking key development activities necessary to produce a nuclear explosive device. However, Iran has continued to expand its uranium enrichment and metallurgy activities beyond the limits of the Joint Comprehensive Plan of Action (JCPOA). Iran also continues to have limited success with its development and flight tests of space launched vehicles (SLV), including boosters that could support achieving intercontinental ballistic missile (ICBM) ranges if configured for that purpose.

North Korea retains nuclear and biological weapon capabilities as well as a likely chemical warfare program. North Korea has worked on the development of hypersonic gliding weapons and leader Kim Jong Un informed the Eighth Congress of the Korean Workers Party in January 2021 that development of hypersonic missiles for their next strategic weapon is underway. Pyongyang established a research center dedicated to hypersonic missile-related development that same month. 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 persists and both countries continue to develop and flight test nuclear capable delivery systems. In 2021, India officials indicated their latest ballistic missile in development will provide operational flexibility while Pakistan reported the test of a domestically produced extended range cruise missile.

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Regarding Violent Extremist Organizations (VEOs), the U.S. and our Coalition partners have succeeded 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, including possible crude CBW attacks against the U.S. Homeland. Moreover, VEOs offer potential instructions, documents, and videos on the internet to both inspire and to enable the use of crude toxins and improvised chemical weapons by their supporters as well as lone actors.

New technologies, rapidly diffusing around the world, put increasingly sophisticated capabilities in the hands of small groups and individuals as well as enhancing the capabilities of nation states. While democratization of technology can be beneficial, it can also be economically, militarily, and socially destabilizing. For this reason, advances in technologies such as computing, biotechnology, artificial intelligence, and manufacturing warrant extra attention to anticipate the trajectories of emerging technologies and understand their implications for security.

Accomplishments

National Defense Strategy and National Military Strategy. Over the past year we contributed to the development of the National Defense Strategy (NDS) and National Military Strategy (NMS) to ensure our strategic approach keeps pace with our adversaries' WMD

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capabilities. USSOCOM participated in the Chairman's operational planning teams to integrate relevant CWMD objectives in the NMS and worked with the CWMD Unity of Effort Council – co-chaired by OSD and the Joint Staff – to ensure CWMD equities are included in the NDS.

Joint Force Resiliency. We implemented pertinent insights from the U.S. Forces Korea and U.S. European Command Chemical, Biological, Radiological, and Nuclear (CBRN) defense and CWMD-focused assessments to ensure the Joint Force can continue to operate in a contaminated environment. This process led U.S. European Command to develop an Implementation Plan designed to enhance CBRN readiness across its area of operations over the next few years.

Operational Planning Enhancement. USSOCOM collaborates closely with the Joint Staff, Combatant Commands, and military services to assess the global DoD CWMD campaign and ensure operational military plans appropriately address changes in the WMD threat environment. We initiated revision of our FCP to ensure optimal alignment of CWMD objectives across applicable Combatant Commands' operational plans and improve unity of effort across the DoD.

Advanced Exercises and Training. We integrated CWMD scenarios within the Chairman's Globally Integrated Exercise (GIE) and Global Integrated Campaign of Learning (GICoL). Exercising CWMD objectives with joint, interagency, and international partners ensures senior leaders are informed about the range of possible strategic outcomes and perceptions of other state and non-state actors given certain provocations, and improves the effectiveness, feasibility, and range of U.S. responses.

Enhanced International Integration. After publishing an unclassified CWMD guidebook for distribution to allies and partners on June 14, 2021, USSOCOM joined the U.S. delegation to

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the NATO Joint CBRN Defence Capability Development Group. We collaborated with 80 international experts from 20 NATO nations through this organization that supports development of CBRN defense capabilities including, but not limited to doctrine, materiel, and training. The U.S. delegation led an effort to rename the title of Allied Joint Publication 3.23 to “Countering Weapons of Mass Destruction in Military Operations,” replacing “Weapons of Mass Destruction Disablement.” This change ensures alignment between NATO and U.S. doctrine and terminology to drive NATO capability development beyond CBRN defense.

Improved Information Sharing. USSOCOM employs transregionally focused threat actor branches that enhanced shared understanding of WMD proliferation and procurement channels employed by adversaries ensuring deconfliction between the DoD, other U.S. government departments and agencies, and international partners while enabling operations, activities, and investments. In partnership with the Office of the Secretary of Defense and the Joint Staff, on October 28, 2021, USSOCOM established an ongoing CWMD information sharing forum with the UK, Canada, Australia, and New Zealand to coordinate and deconflict CWMD planning priorities and activities. As we enhance perceptions of strategic risk and associated mitigations, we can evaluate multiple contributions to counter the threat that may enhance our whole of government responses in heretofore unrealized ways.

WMD Pathway Defeat. USSOCOM has partnered with the Joint Staff to conduct a capabilities-based assessment (CBA) for the specialized activity of WMD pathway defeat. This CBA will identify proposed advancements for future Joint Force capabilities to defeat adversary WMD acquisition and development as part of a U.S. government approach in concert with our interagency partners.

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CWMD Senior Leader Seminar. On February 9-10, 2022, we facilitated the annual CWMD Senior Leader Seminar (SLS) to address Chinese WMD threats within the Indo-Pacific area of responsibility, support relevant DoD strategies, plans, and policies, and improve interoperability between the U.S. government and our international partners. Key outputs and recommendations from the SLS included commitments for sustained advancement of information sharing and collaboration with our allies.

2022 Priorities and Conclusion

We will continue to collaborate with the Combatant Commands, the Joint Staff and other government agencies to review our functional campaign plan and ensure it aligns with the National Security Strategy, National Defense Strategy, and the National Military Strategy. 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 DoD colleagues to keep our country safe from the threat of nuclear, chemical, and biological weapons. 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 Collin Green
Deputy Commander, U.S. Special Operations Command

Vice Adm. Collin Green graduated from the U.S. Naval Academy in 1986 and Basic Underwater Demolition/SEAL Class 149 in 1988. Green holds a master's degree in International Affairs from Catholic University of America, and is a distinguished graduate of the Naval War College with a master's degree in National Security and Strategic Studies.

Green participated in special operations in Europe, Africa and Asia. Tours in Naval Special Warfare include assignments at SEAL Teams 2, 3 and 5. He served as operations officer, Naval Special Warfare Task Group U.S. 6th Fleet; executive officer, Naval Special Warfare Unit 10; and assistant chief of staff for Plans, Policy and Operations, Naval Special Warfare Command.

Other assignments include naval special warfare officer, Navy Operations and Plans Branch in the Office of the Chief of Naval Operations; naval special warfare officer, U.S. Naval Forces Central Command/U.S. 5th Fleet; U.S. Central Command branch chief, J3 deputy directorate for U.S. Special Operations, Joint Staff; director of operations, NATO Special Operations Component Command/Special Operations Joint Task Force-Afghanistan; executive officer, Supreme Allied Commander Europe/Commander, U.S. European Command, and as chief of staff, U.S. Special Operations Command. He currently serves as deputy commander, U.S. Special Operations Command.

His command tours include SEAL Team 3, where he deployed as commander, Naval Special Warfare Task Group - Iraq in support of Operation Iraqi Freedom; Naval Special Warfare Unit 3; Naval Special Warfare Group 1, U.S. Special Operations Command South, and Commander, Naval Special Warfare Command.

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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

APRIL 1, 2022

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE

Introduction

Chairman Gallego, Ranking Member Kelly, and distinguished members of the subcommittee, thank you for the invitation to testify today. This Committee and its members have long provided outstanding support to the Defense Threat Reduction Agency (DTRA), and I look forward to offering you an update on our vital work in countering and deterring Weapons of Mass Destruction (WMD) and emerging threats.

On behalf of over 2,200 military and civilians, I am proud to appear today alongside Ms. Deborah Rosenblum, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; Dr. John Plumb, Assistant Secretary of Defense for Space Policy; and Vice Admiral Collin Green, Deputy Commander, U.S. Special Operations Command.

As both a Defense Agency and Combat Support Agency and the principle counter-WMD organization in the Department of Defense – DTRA serves as the linchpin between the Department’s counter-WMD strategies and its practitioners. Through Ms. Rosenblum, Dr. Plumb, and their subordinate components, the Agency receive guidance, priorities, and oversight in the areas of nuclear matters, chemical and biological defense, threat reduction, and arms control. At the same time, we support U.S. Special Operations Command’s role as the Coordinating Authority for counter-WMD, and work closely with Vice Admiral Green’s staff – as well as those of the other Combatant Commands – providing strategic, operational, and tactical planning and expertise, as well as embedded support and material and non-material counter-WMD solutions. These dual roles provide a synergy that is key to the successful execution of our counter-WMD mission, and support the Department’s strategy of integrated deterrence.

DTRA maintains a global presence necessary to sustain and grow partnerships, provide real-time understanding of the WMD landscape, and to ensure timely and accessible capabilities are available to policymakers, the Services, and the Combatant Commands and our international and interagency partners. Our footprint includes expertise embedded at the Combatant Command headquarters, in Regional Cooperation Engagement Offices at key embassies, and multinational bodies such as the North Atlantic Treaty Organization. It also includes support to our closest allies, with DTRA liaison officers embedded with partners in the United Kingdom and Australia,

and reciprocal liaisons from these countries and Canada on our own staff. We also maintain a presence on the Joint Staff and in offices across the Department and U.S. interagency, in order to ensure strong connections within the counter-WMD enterprise. Through these partnerships, we provide exquisite technical, analytic, and operational expertise and capabilities to enable the Department of Defense (DoD), U.S. Government, and international partners to counter and deter WMD and emerging threats.

A Successful Year

Despite the dynamics of operating in a COVID-19 environment, DTRA remained highly productive in 2021. The Agency aligned to the Department's guidance prioritizing China and Russia, bringing to bear significant capabilities in service to international partnerships, integrated deterrence, and strategic competition.

DTRA's premier technical and analytic capabilities provide Combatant Commands, the interagency, and international partners with world-class WMD expertise to inform planning and operational decision-making. For example, DTRA's 24/7 reachback team completed and delivered responses to over 1,000 requests for support in 2021 for real-time modeling for chemical, biological, radiological, and nuclear consequence management. The Agency sent teams of subject matter experts forward to support U.S. Special Operations Command and U.S. Indo-Pacific Command, as well as to support exercises such as the North Atlantic Treaty Organization's *Steadfast Jupiter 21*, where we provided chemical, biological, radiological, nuclear, and high-yield explosives modeling support. Additionally, the Agency produced nearly 100 options for the Combatant Commands, to ensure their operational plans have the highest probability of success and flexibility for combat operations against adversary WMD targets.

DTRA, on behalf of the Department, also commemorated the 30th anniversary of the highly successful Cooperative Threat Reduction Program (CTR). Since its inception in 1991, CTR has productively engaged with foreign partners to eliminate and prevent the proliferation of WMD threats, tackling 70 projects in 36 countries in the last year alone. To cap off the program's 30th year, teams built nuclear security training centers and enhanced nuclear material inventory management systems in Kazakhstan. CTR programs trained and equipped Iraqi border guards to detect and track anomalies along the Syrian border. Under CTR's Biological Threat Reduction

Program, we assisted partner countries to mitigate threats posed by COVID-19 and other highly transmissible diseases. These efforts build enduring capacity for foreign partners to address the WMD threats globally and have the benefit of building U.S. rapport as a trusted partner, mitigating malign Russian and Chinese influence.

In cooperation with the Federal Bureau of Investigation and Departments of Energy, State, and Homeland Security, we continue to implement the International Counterproliferation Program, which builds the capacity of international partners to prevent proliferation attempts and disrupt proliferation networks by applying U.S. interagency expertise to improve training, equipment, and doctrine. The program held successful engagements across multiple Combatant Commands throughout the year. DTRA continued progress on significant program efforts in U.S. European Command through engagements with Romania, Croatia, and Bulgaria and renewed our focus on priority partners in U.S. Indo-Pacific Command with countries such as Brunei and Vietnam. These multifaceted counterproliferation engagements build measurable and sustained partner capacity to counter WMD proliferation threat networks.

This past year also served as a capstone for building partner capacity efforts on the African continent. U.S. Africa Command's *African Lion 21* – the premier Northern African security cooperation exercise in – served as the stage for Senegalese and Moroccan forces to demonstrate their readiness to counter WMD on a large scale. Leveraging the National Guard Bureau's State Partnership Program, DTRA is able to extend its investments and ensure a sustained system of training and support that will directly improve regional stability – a key component of countering WMD. These continued engagements bolster relationships among African nations and posture the United States as the strategic partner of choice in the region.

DTRA physical security modeling and simulation capabilities were brought to bear in the development and execution of a large DoD force-on-force exercise, which provided a comprehensive picture of current physical security posture and an efficient estimation of effectiveness for proposed future upgrades. This newly employed capability narrowed down the best technologies, tactics, techniques, and procedures to test in a force-on-force environment and allowed for the efficient prioritization of mitigating solutions for our C2 infrastructure.

Our Mission

Since my last testimony, and in response to changing Administration priorities, DTRA focused our Strategy on a renewed balance between our dual-chartered roles of Defense and Combat Support Agency. This Strategy clearly links the President's Interim National Security Strategic Guidance, the Secretary of Defense's priorities, and DTRA opportunities, activities, and investments. Our strategic goals are straightforward: (1) ensure a safe, secure, reliable, and effective nuclear deterrent; (2) counter WMD and emerging threats; (3) enable the Joint Force and our allies and partners to compete and win against adversaries; and (4) build an adaptive and resilient Agency. These goals set the foundation for the work DTRA will plan, program, and execute on behalf of its stakeholders not just in the coming year, but across the Future Years Defense Program and beyond.

Ensure a Safe, Secure, Reliable, and Effective Nuclear Deterrent

Admiral Charles Richard, Commander of U.S. Strategic Command, noted in his recent testimony that "strategic deterrence relies on credible capabilities backed by a safe, secure, reliable, and effective nuclear enterprise." With roots that reach back to the Manhattan Project, DTRA and its forebears have been a part of the U.S. nuclear enterprise for nearly 80 years. To ensure the deterrent remains credible today, DTRA supports the Department, the Services, and U.S. Strategic Command through a portfolio that includes the modernization of strategic concepts; system surety and readiness; site security and mission assurance; stockpile accountability and logistics; Joint and international partner training and force preparedness; advanced research and development for nuclear effects and survivability; and treaty verification.

At a tactical level, DTRA's Defense Integration and Management of Nuclear Data Services, known as the DIAMONDS program, is the DoD's sole tracking and reporting system for all critical nuclear weapon components. As such, DIAMONDS received system upgrades in 2021. Bringing the upgraded Next Generation system online achieved a major milestone in modernizing the DoD's constant ability to monitor, track, and sustain its nuclear stockpile through leading edge cybersecurity and seamless exchange of nuclear stockpile data with the Department of Energy.

As the DoD's Mission Assurance Center of Excellence, DTRA also helps mission owners secure the Department's most critical strategic assets. By identifying physical and cyber vulnerabilities in DoD's critical infrastructure, our teams of multi-discipline experts oversee weeks-long, intrusive inspections at sites worldwide that help commanders defend against hazardous events and site exploitation, and deliberately plan for risk management and surety. Over the past year, in concert with the Intelligence Community, DTRA has improved the fidelity of these assessments by incorporating timely, adversary-specific threat data to ensure these inspections capture anticipated national security threats.

DTRA also responded to a Chairman of the Joint Chiefs of Staff directive to improve Joint Force survivability – a key element in adversaries' decision calculus. The Agency planned, designed, and completed – using state-of-the-art surrogate capabilities – a full-scale High-Altitude Electromagnetic Pulse test of U.S. Strategic Command's Global Operations Center. In doing so, the Agency validated the survivability of U.S. nuclear command and control.

The Agency also conducts research and development to ensure the Department has the ability to detect the entire spectrum of nuclear coercion and aggression. Through extensive analyses of nuclear testing seismic data, we work to calibrate U.S. seismic stations and improve diagnostic tools for detonation monitoring. The Agency also completed upgrades and transitioned several diagnostic and monitoring tools to improve U.S. and DoD detection capability of evasive nuclear tests. These efforts ensure that U.S. nuclear forces remain ready and able signal U.S. resolve and provide extended assurance and deterrence.

The Department's forthcoming Nuclear Posture Review will certainly shape and inform our future efforts. Nevertheless, DTRA's long-standing expertise ensuring U.S. nuclear forces remain mission-capable and resilient against potential adversaries in an era marked by proliferation pressures, evolving norms, and technological change will be a component of the U.S. nuclear deterrent.

Counter WMD and Emerging Threats

Our competitors and adversaries believe that WMD are critical to shape the battlespace, and achieve advantage across the spectrum of competition and conflict. Competitors and adversaries seek to leverage WMD to amplify their coercive influence and dissuade retaliation. In the era of

eroding norms, WMD-armed competitors and adversaries continue to tear down the traditional barriers between conventional and non-traditional forces, creating a multi-layered challenge for the United States and its allies. DTRA enables the Department to strategically shape the operating environment to reduce risk for our combatant commanders and international partners, providing technologies and integrated deterrence solutions for the most intractable WMD problems.

DTRA turns WMD intelligence into actionable assessments of threat and risk. Using DTRA-developed artificial intelligence and machine learning tools, our teams have built algorithms that can pick up the subtle indicators that can signal proliferation, particularly on dual-use materials. Harnessing the power of existing information databases, we quickly synthesize data to respond to real-time operational inquiries. This capability has proven its worth by illuminating WMD procurement networks and providing Combatant Commands, the interagency, and international law enforcement with the information necessary to disrupt trafficking of WMD, its delivery systems, and related materials.

Agency experts also closely monitor a myriad of scientific disciplines, technologies, and materials to identify emerging threats in the WMD space and to ensure the Department has the ability to address operational vulnerabilities. Understanding the threat – how WMD elements work, how they can be employed, how to detect them and protect against them – focuses the Agency’s capabilities for developing and adapting solutions for the Joint Force in a WMD environment. Some of our recent successes include producing 12 unique, target-specific test articles for experimentation, allowing the Agency to leverage our exceptional test and evaluation capabilities in New Mexico to conduct laboratory and operational validation of WMD defeat concepts. DTRA’s ability to rapidly identify, develop, test, evaluate, and field capabilities in response to WMD threat trends is one of the hallmarks of our support to the Joint Force.

The Agency also provides policymakers, planners, and partners with unique insight into competitor and adversary WMD force posture, doctrine, and systems – examining how our competitors might employ and integrate WMD during conflict, better preparing U.S., allied, and partner forces for overmatch within a WMD battlespace.

Through innovative and agile actions DTRA works with our partners across the spectrum of WMD threats, preventing not only the acquisition, proliferation, and use of WMD and associated materials, but bring our capabilities to bear to frustrate the decision calculus of competitors and adversaries in order to mitigate the threat of global aggression and minimize risk of escalation.

Enable the Joint Force and Our Allies/Partners to Compete and Win against Adversaries

Increasing partner nations' counter-WMD capabilities serves to compound our own ability to reduce the WMD threat. DTRA's efforts span from security cooperation and building partner capacity to information sharing agreements, shared science and technology or research and development investments, and collaboration on plans, exercises, and operational readiness. Through exchange and liaison officers, strategic dialogues, training, workshops, conferences, exercises, and various other cooperation and partner capacity-building activities, DTRA ensures the Department is inextricably linked with individual countries as well as multi-national alliances and partnerships such as the North Atlantic Treaty Organization and Five Eyes. Our reach provides threat-specific support across multiple policy initiatives and in every Combatant Command. We continue to strengthen and sustain existing partnerships and develop new relationships, as directed by policy, cementing a global counter-WMD readiness to prevail against our adversaries.

DTRA's deep ties to key U.S. allies and partner's enables strategic deterrence and reduction of global threats. DTRA-sponsored strategic dialogues, training, facilities and equipment in Southeast Asia has strengthened maritime and border security operations, including in the Philippines, where national forces have gone on to identify and interdict dual-use materials as they passed through the region – helping reinforce a strong deterrent against proliferation of these technologies by our adversaries. Additionally, the Biological Threat Reduction Program's focus on improving foreign partners' biosafety, biosecurity, and biosurveillance capabilities has been successful in early identification and containment of infectious disease outbreaks at their source, aiming to contain outbreaks before they become destabilizing regional events or pose a threat to the Joint Force, U.S. Homeland, or U.S. interests. Our Nation's experience dealing with the COVID-19 pandemic illustrates how important it is to build an indigenous capability in this area.

By combining cutting-edge research and development with expanding non-proliferation, counterproliferation, and security cooperation initiatives, DTRA continues to identify and secure vulnerable WMD materials, and ensure U.S. and partner readiness to understand, protect, and mitigate against the effects of adversary use.

Build an Adaptive and Resilient Agency

When we updated our Agency Strategy this year, we deliberately included the health and resilience of our workforce as a primary strategic objective because we recognize its criticality to DTRA's unique mission. DTRA's workforce is its single greatest strength; the Agency benefits from a highly skilled technical and operational workforce, committed to the counter-WMD mission. As we face a future marked by rapid change and technological advancement, our workforce must match and exceed the agility of the threat.

We must build and retain human capital that understands the past, and applies those lessons to an evolving threat environment. As such, we are building a comprehensive Human Capital Roadmap to recruit, retain, and continue to enable a workforce that is not only effective, but also passionate about our mission to counter and deter WMD and emerging threats.

I am proud to note that late last year, DTRA reached its first-year milestone of an internal Diversity and Inclusion Council. Led by two of our senior executives, this Council formed seven volunteer-led Employee Resource Groups. The Employee Resource Groups developed Action Plans that set the framework for special observances within DTRA, provided mentorship opportunities, and highlighted diverse perspectives. They also elevated an important policy change within DTRA: their input shaped new Agency guidance that aims to reduce bias in DTRA's civilian hiring processes. As the Employee Resource Groups enter their second year, we anticipate more ideas and innovation to continue to make progress towards the Administration's diversity and inclusion objectives.

Our work to build an adaptive and resilient agency nests with our commitment to develop innovative capabilities. I am pleased to report that this year's R&D 100 Awards – the "Oscars of Innovation" – honored DTRA for three projects. The awards are an indication of DTRA's

commitment to develop an innovative workforce that prioritizes groundbreaking technologies that counter the WMD threats of today and tomorrow.

Conclusion

There are few greater challenges to U.S. national interests than those posed by WMD and emerging threats. DTRA takes pride in providing the technological, operational, and intellectual capacity within the Department needed to meet these challenges. Our world-class workforce, and unparalleled professional network, access, and credibility give us an unmatched advantage in enabling the DoD, U.S. Government, and international partners to detect, deter, and defeat WMD and emerging threats in every theater.

We continue to create synergy between our Defense and Combat Support Agency roles, align resources to requirements to ensure the best use of our resources, and work toward measurable outcomes and tangible impact.

On behalf of DTRA's dedicated workforce, I thank you for your continued support of our critical work in safeguarding the lives and interests of the U.S. and our allies and partners abroad. Thank you for your time and invitation to participate today, and I look forward to your questions.

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

APRIL 1, 2022

QUESTIONS SUBMITTED BY MR. SCOTT

Mr. SCOTT. Should fentanyl be considered a weapon of mass destruction?

Ms. ROSENBLUM. As the senior advisor and technical expert to the Secretary and Deputy Secretary of Defense for chemical and biological defense, my job is to provide the capabilities to ensure the Joint Service can deter or fight and win in a chemical or biologically-contaminated environment. The Department of Defense (DOD) considers pharmaceuticals such as fentanyl and its derivatives to be therapeutic drugs with legitimate medical uses when prescribed appropriately by medical authorities. However, an actor's misuse of a pharmaceutical chemical to threaten the lives and well-being of groups of humans is what makes fentanyl and other pharmaceutical-based agents (PBAs) a potential chemical weapons concern and a concern that DOD takes very seriously. The chemicals themselves are not inherently weapons of mass destruction, but actors can use them in ways that make them a chemical weapon. Regardless of whether it's considered a weapon of mass destruction or not, DOD is working to ensure the Joint Force can fight and win should a PBA be used near or against U.S. service members. To do so, the Department is committed to providing an integrated and layered defensive system that includes the understand, protect, and mitigate portfolios. The DOD Chemical and Biological Defense Program (CBDP) program is working to better understand the PBA threat and DOD's ability to detect and mitigate PBA usage. The program is incorporating PBA-detection algorithms into detectors such as the Aerosol & Vapor Chemical Agent Detector, a man-portable system. Our PBA medical program includes evaluating FDA-approved drugs for operational use and developing novel medical countermeasures (MCMs) to enhance the protection and/or operational utility for the Warfighter. The Rapid Opioid Countermeasure System (ROCS) is a higher concentration Naloxone formulation DOD developed for use in an autoinjector. This will allow warfighters with no medical expertise to self-administer Naloxone if they are exposed to fentanyl or other PBAs that can be treated with Naloxone. In February 28, 2022, the FDA-approved the ROCS autoinjector and they were subsequently deployed to U.S. forces as part of the response to Russia's invasion of Ukraine.

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Dr. PLUMB. DOD considers pharmaceuticals such as fentanyl and its derivatives to be therapeutic drugs, which if prescribed appropriately by medical authorities have legitimate medical uses. However, pharmaceuticals could be weaponized and developed into a pharmaceutical-based agent (PBA), which the Department of Defense (DOD) takes seriously. There is concern that certain foreign governments are pursuing so-called incapacitating agents under the guise of riot control agents or medical research. We believe such activities undermine the international norm against chemical weapons use, and DOD supports efforts, such as those at the Organization for the Prohibition of Chemical Weapons (OPCW), to create practical and normative barriers to impede the emergence of future threats.

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Admiral GREEN. Fentanyl and its analogues are legitimate pharmaceuticals which if prescribed appropriately by medical authorities have legitimate medical uses. The Conference of States Parties of the CWC recently passed a decision that found that the aerosolized use of Central Nervous System Acting Chemicals (CNSACs), which would include chemicals such as fentanyl, was found inconsistent with the law enforcement exemption as a purpose not prohibited under the CWC. This means a majority of CWC-signatory nations now acknowledge that fentanyl and other CNSACs have properties that are dangerous when used outside a medical environment. They are also different than traditional riot control agents (RCAs)—with some having toxicities comparable to lethal nerve agents. DOD is concerned certain nation-state adversaries are pursuing PBAs as part of their offensive chemical warfare programs. The DOD requires preparedness to defend against any form of chemical weapon, regardless of toxicity, being developed, stockpiled, or used in a way intended to cause harm to humans, which can include fentanyls. Additionally, the DOD notes any explicit designation of fentanyl as a WMD has implications for numerous other U.S. Government agencies given fentanyl's use as both a legitimate pharmaceutical and

illicit drug, and encourages consideration of these implications in any policy decisions.

Mr. SCOTT. Is far forward, rapid, portable infection detection' a priority for our warfighters? If so, what resources are needed to accelerate this important program?

Dr. WILLIAMS. DTRA engages in efforts to develop far forward, rapid, and portable infection diagnostic systems through executing the funding and mission for the Chemical and Biological Defense Program (CBDP) Science and Technology efforts. Through the CBDP science and technology funds, DTRA is investing in transformative wearable technologies to monitor and assess physiological changes within the Joint Force. Quickly identifying if a warfighter has been infected by a known or unknown biological hazard greatly enhances our ability to rapidly provide tailored medical countermeasures to prevent or reduce the onset of physiological effects as well as alert other forces to avoid or decontaminate the location where a hazard has been detected. As the science advances, we gain a more nuanced understanding of how physiological markers are changed by diseases and exposure to biological hazards. Wearable technologies could both alert when a biological hazard exists in the environment and identify if a service member has become infected up to 48 hours prior to the onset of symptoms. This type of early infection-warning system offers the warfighter a distinct advantage. These wearable technologies would also unencumber the warfighter by reducing the logistical burden of carrying and using agent-specific detection and diagnostic systems. The additional funding DTRA received through the CBDP to support the Department's biodefense mission is sufficient and will help accelerate efforts to provide the joint force with far forward diagnostic capabilities, enhance our ability to provide tailorable medical countermeasures, and alert decision makers to prevent further contamination.

Mr. SCOTT. How is DTRA supporting small business R&D in point-of-care, rapid pathogen detection for warfighters?

Dr. WILLIAMS. DTRA participates in and advertises applied research needs through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. In the past, some SBIR/STTR awards have addressed pathogen detection for the warfighter. DTRA also uses contracting mechanisms such as Other Transaction Authority (OTA) solicitations and Broad Agency Announcements (BAA) through which small businesses can propose and compete for funding and awards.

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Dr. WILLIAMS. The DOD considers pharmaceuticals such as fentanyl and its derivatives to be therapeutic drugs, which if prescribed appropriately by medical authorities have legitimate medical uses. However, DTRA recognizes that fentanyl could be weaponized and developed into a pharmaceutical-based agent (PBA), and this informs the execution of our mission. DTRA supports research into the detection, impacts, and mitigation of fentanyl exposure to ensure our warfighters are able to execute their missions effectively and safely. These efforts include the evaluation of the magnitude, duration, and operational implications of both indoor and outdoor utilizations of fentanyl as an incapacitant. The effectiveness of current protective equipment has been validated along with an FDA-approved medical countermeasure in such concentrations that are relevant and life-saving in a battlefield environment. While DTRA efforts have focused on mitigating the effects of weaponized pharmaceutical-based agents (PBA) such as fentanyl, we also recognize fentanyl's legitimate medical and therapeutic uses.