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House Armed Services Committee

STATEMENT OF

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FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS

TESTIMONY BEFORE THE

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

May 4, 2021

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INTRODUCTION

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

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

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

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

THREAT ENVIRONMENT

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

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

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

COVID-19

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

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

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

NCB ALIGNMENT TO NATIONAL STRATEGY

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

1 – ADDRESS ADVANCED AND EMERGING THREATS

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

2 - DELIVER AT SPEED

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

3 – INNOVATE TO MODERNIZE

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

4 – SYNCHRONIZE TO OPTIMIZE

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

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

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

ROLE OF THE NCB OFFICE IN CWMD

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

<u>Ensuring a Secure, Sustainable, and Effective Nuclear Deterrent</u>

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

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

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

Disrupting Proliferation Networks

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

Arms Control Posture

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

Chemical Weapon Elimination

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

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

Expanding Chemical and Biological Defense

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

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

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

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

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

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

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

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

Strengthen Alliances

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

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

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

CONCLUSION

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