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

Statement of Mr. Vayl Oxford
Director, Defense Threat Reduction Agency

Reviewing Department of Defense Strategy, Policy, and Programs for Countering Weapons of Mass Destruction (CWMD) for Fiscal Year 2019

Before the

Emerging Threats and Capabilities
Subcommittee
Committee on Armed Services
United States House of Representatives

March 22, 2018

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

Chairwoman Stefanik, Ranking Member Langevin, and Members of the Subcommittee, it is an honor to be here today to share with you the work we do every day to combat the threats posed by chemical, biological, radiological and nuclear (CBRN) weapons, and improvised threats to ensure a safe and effective deterrent.

My goals for this hearing are to provide you with an understanding of the threat environment that we face, the capabilities the Defense Threat Reduction Agency (DTRA) provides to the Combatant Commands and Services, the critical international and interagency partnerships and relationships we leverage to build partner capacity, our focus on innovation, and our work in the nuclear enterprise. DTRA is grateful to the Committee for the strong funding and authorities they have provided. I am hopeful that the Committee will continue to provide these critically needed resources and serve as an advocate for the Countering Weapons of Mass Destruction (CWMD) and improvised threat mission space.

What We Do

DTRA is a unique organization with diverse capabilities. Our expertise spans improvised explosive devices, high yield explosives, as well as the full weapons of mass destruction (WMD) threat spectrum – chemical, biological, radiological, and nuclear weapons. While we are not the only players in this field, we have a unique concentration in these critical mission areas. Along with the partners at this table and others, we are responsible for one of the critical objectives outlined by the 2018 National Defense Strategy, "Dissuading, preventing, or deterring state adversaries and non-state actors from acquiring, proliferating, or using weapons of mass destruction."

With a planned effective date of June 1, 2018, DTRA is scheduled to align directly under the authority, direction, and control of the Under Secretary of Defense for Acquisition and Sustainment (USD A&S). In this role, we support and enhance the nuclear enterprise; we support United States Government efforts to prevent the proliferation and use of WMD; and we perform and manage a research and development portfolio to develop tools and capabilities to respond to WMD and improvised threat environments. In fact, DTRA provides the United States

Special Operations Command (SOCOM) with the majority of their counterproliferation applications. As a combat support agency, DTRA also communicates directly with the Offices of the Chairman of the Joint Chiefs, and provides direct support to combatant commanders and the Services.

Our programs come in many shapes and sizes and we work all over the world. On any given day, hundreds of DTRA experts are deployed overseas, and in certain cases to some of the most dangerous and sensitive of areas, in order to provide analysis, research, testing, training, and operational expertise.

Expanded Relationship with SOCOM

As of January 2017, SOCOM assumed the Unified Command Plan CWMD mission responsibilities previously performed by the United States Strategic Command. As the Coordinating Authority for CWMD, SOCOM integrates DoD plans and intelligence priorities to support operations against state and non-state networks that possess or seek WMD, and executes global operations against the same - in coordination with other Combatant Commands. Last year, SOCOM established the CWMD Fusion Center, with a large contingent resident at the DTRA headquarters at Ft. Belvoir, to serve as a nexus of CWMD awareness, active planning, and operational advocacy across functional and geographic missions. This expanded relationship is already paying dividends. For example, DTRA is providing planning support to the SOCOM Fusion Cell to advance progress on the Global Campaign Plan annexes.

Additionally, SOCOM has asked DTRA to develop, maintain, and manage the digital CWMD situational awareness tool to enable the Department's decisions for the CWMD campaign, campaign activities, contingency operations, and crisis action plans.

Evolving Threat

We live in the most complex and dynamic geopolitical and threat environment ever confronted by our Nation.

We spent decades during the Cold War confronting the threat from the Soviet Union. Much of our national security and intelligence apparatus was uniquely focused on that threat**.** By comparison, very little attention was devoted to other nation state threats**.** Over time, a calculus evolved that was based on some common sense understanding of U.S. and Soviet policies and on the precept of mutually assured destruction.

With the end of the Cold War, we began to face the evolving threats from nation states such as Iran, North Korea, and Iraq who had been in the background for many years. The shift in focus to those threats was complicated. Our intelligence experts were Soviet specialists and the experience to focus on new threats had to evolve over many years. Our military/industrial complex was focused on big force deployments and nuclear capabilities to counter the Soviet threat. Over time, we began to overcome these difficulties but the intelligence community struggled through a period of developing new expertise in the various countries as well as in understanding the threat networks and capabilities across the threat spectrum. The Soviet threat was well characterized, but the new nation state threats were not and we faced a very difficult "dual-use" dilemma when it came to chemical and biological threats.

Then 9/11 happened, and while we did not lose all of our focus on these nation-state threats, we did shift much of our focus to the counterterrorism fight. This required a totally different approach and force structure. We had to confront this threat globally rather than in well-defined countries or regions. We needed new tools and capabilities to identify, locate, and defeat the terrorist threat. After 17 years, we have much better tools, capabilities and expertise to "manage" the terrorist threat. We never expect to defeat it, but will continue to limit its overall impact.

Now, as we assess today's threat spectrum, we are faced with all three of the threat environments we have confronted since WWII. The United States faces a return to great Power competition with Russia and China. We have the continuing nation state threats in Iran and North Korea among others. And we have the on-going ISIS, Al Qaeda, Taliban and other terrorist group threats. Rapidly evolving technologies—ranging from synthetic biology to 3D printing and unmanned delivery vehicles—are both exacerbating existing threats and making WMD and IED technologies more diffuse and accessible, and not just to nation states. Today, we have to watch not just a handful of nations; we have to watch a world full of bad actors. The threat is comprised of complex global networks that require a shift in our approach to prevent proliferation and use.

To quote again from the 2018 National Defense Strategy, "the security environment is also affected by rapid technological advancements and the changing character of war. The drive to develop new technologies is relentless, expanding to more actors with lower barriers of entry and moving at accelerating speed." Our Nation and International partners must confront this ever-evolving threat with agile, innovative, and timely responses.

DTRA's Priorities

With these challenges in mind, I have developed four key priorities for DTRA that align with the Department's priorities and lines of effort.

Enhancing Combat Support

In order to build a more lethal force, I have enhanced our focus on our combat support responsibilities. We have initiated an expansive outreach effort with all of the Combatant Commands to assess their WMD challenges and what capabilities DTRA can provide. We are increasing our communications with the Commands from the top down and expanding networks and relationships. We have asked the Combatant Commands to prioritize their requests based on the threat so that we can utilize those inputs in our own budget strategies and planning process.

For example, we are working closely in partnership with the Combatant Commands to develop counterproliferation strategies and capabilities to hold nation state WMD and improvised threat networks at risk. Within DTRA, we have established contingency and deliberate planning cells to develop country specific strategies for top tier threat nations. These cells work in collaboration with operational and interagency partners to conduct WMD and delivery system network analysis, and develop options for execution.

We also work with the Combatant Commands to illuminate threat networks. We are focused on networks who are attempting to develop or proliferate WMD and improvised threats. The counter threat networks analysis we provide enhances joint force commanders' operational planning, force protection, maneuverability, tactical responsiveness, and actions against threat networks. The tools that we develop enable decisions on kinetic and non-kinetic actions on the threat's supporting supply chains.

This effort is important as threat networks are agile learning organizations. They operate seamlessly in multiple domains, to include virtually -- using social media and the Internet to communicate, raise funds and share intelligence. We, too, must be equally adaptable, agile, flexible, and fast. Working closely with the intelligence community, we enable Commands by conducting continuous monitoring and analysis of designated threat areas as well as associated groups, their relationships, capabilities and intentions. We enhance situational understanding of these networks. Through the understanding of the threat's tactics, techniques, and procedures, where the threat networks are operational and what technologies they deploy, DTRA takes action to prepare for and deliver counter-threat solutions.

One example of the capabilities that we provide to Combatant Commands can be seen through our efforts to improve our lethality to threats underground. Our adversaries know that what we can see, we can likely defeat. They are adapting. As a result, they are digging deep into the recesses of mountains and buried caverns to hide whole laboratories and other facilities. They are creating complex tunnels to relocate undetected missiles. They are fortifying their military installations under tons of advanced concrete. These underground military installations increase

risk to our national objectives. As a result, we need agile and adaptive solutions to overcome them. And, we need them quickly.

DTRA supports our Commands and troops with capability to see and better understand what our enemies are hiding underground. DTRA research and development programs are developing unique intelligence, surveillance, and reconnaissance to understand how the enemy moves weapons of mass destruction between storage facilities and launch points. DTRA employs scientists and engineers to prioritize hard target sets to inform pre-mission planning. We are focusing more and more on helping the Combatant Commanders frame the questions to drive the kind of intelligence that will allow us to scope their operational planning.

DTRA supports our troops with capabilities to operate underground. DTRA develops sensor capabilities to send ahead of the soldier into the underground terrain, providing the warfighter digital eyes to see the map to maneuver within a labyrinth. DTRA develops sensors that can provide early warning and alert the warfighter to the presence of poisons and dangerous levels of radiation. DTRA refines the tactics, techniques, procedures, and protective equipment to defend the soldier against improvised explosive devices and unconventional booby traps hidden in the crevices and corners of complex tunnel systems.

DTRA supports our troops with capabilities to defeat what is underground. DTRA develops unique munitions to hold WMD targets at risk. DTRA retains experts on hand that understand the weapon designs of our current stockpiles so that we can accurately model the effects and tradeoffs of employing different weapons against hard and deeply buried enemy targets. These are the same experts that inform the warfighter on how to protect innocent populations and minimize collateral blast effects in ongoing conflicts in the Levant.

The underground domain is not a unique U.S. challenge; it is a future battlespace that some of our closest allies will also experience. DTRA works collaboratively with our allies through technical exchanges and agreements to share the burden to develop solutions and defend our common interests together in this future domain.

We also provide the Combatant Commands and our deployed US and coalition Joint Forces protection from the threat's use of small unmanned aerial systems (sUAS). While I am limited in what I can say on this topic in open session, the threat uses small UAS as a reconnaissance and weapons delivery capability. The threat's capabilities increase exponentially upon each spiral of commercially-available technology. We have seen technology enhancements in as little as 90 days, all available on the open market. This is a major force protection issue and an area of critical focus for DTRA's Joint Improvised Threat Defeat Organization (JIDO).

Expanding Relationships with International Partners and the Interagency

A priority for both the Department and for our Agency is strengthening our alliances to build a more lethal force. Because of the challenges associated with WMD and improvised threats, no one Federal Department, no single geographic region, no single country can marshal the necessary capabilities alone to successfully fight the threats we face. It requires expanded relationships, communication and information sharing, and leveraging expertise and capabilities.

DTRA advances strategic alliances through efforts such as the Nunn-Lugar Cooperative Threat Reduction (CTR) program, which is the Department's most comprehensive and effective tool for working cooperatively with international and interagency partners to mitigate WMD-related threats.

The biological threat reduction component of CTR establishes productive relationships with countries at highest risk for destabilizing disease outbreaks, whether naturally occurring or intentionally spread, to achieve multiple goals including protecting the U.S., our Forces, and our allies from high-consequence biological threats; advancing broader U.S. strategic goals through improved relations; and reducing reliance on DoD's resources during a biological crisis. We work with over 30 nations in this area -- developing a global network that is better prepared to quickly detect and mitigate spread of dangerous pathogens, including when faced with a suspected biological attack.

Moreover, the Office of the Secretary of Defense for Policy, in close coordination with DTRA and through USD A&S, is responsible for providing strategic guidance for the CTR program, which includes significant input from the Combatant Commanders on partner nation priorities and end-states to best reduce risk on WMD and improvised risk.

For example, DTRA continues to work with United States Central Command (CENTCOM) to enhance the capabilities of countries like Jordan and Lebanon to detect, identify, track, and interdict potential traffickers of CBRN materials on their borders with Syria and Iraq. Along with a network of fixed and mobile sensors along these borders, DTRA, in close cooperation with the Department of Energy/National Nuclear Security Administration and other interagency partners, delivers critical WMD border security and detection training and equipment enabling these partner nations to better protect their people from the threat of WMD terrorism and prevent illicit trafficking of WMD. This work is crucial given the well-known intention of terrorist groups to use any WMDs or CBRN materials against the United States and Allied forces. In conjunction with the Office of the Secretary of Defense and the Geographic Combatant Commands, we are exploring expansion of these capabilities to other partners similarly threatened by non-state actors such as ISIS.

In the United States Africa Command area of responsibility, Tunisia provides one such example. In response to the emergence of an ISIS affiliate in Libya and associated WMD proliferation threats, the CTR program has partnered with the Tunisian government to provide an integrated WMD surveillance, detection, and interdiction system along 195 km of Tunisia's rugged desert border with Libya. The system will consist of stationary electro-optical/infrared cameras and radars on 16 towers along the border, a Common Operating Picture, communications links to a Border Security Operations Center, and four regional border security headquarters. Our Tunisian partners are acutely aware of the threat posed by Tunisian militants based just across the border in Libya, with memories of attacks on border stations and tourist spots in the last couple of years still very fresh and WMD proliferation being one of many concerns about the border.

The implementing partner on the project is the Tunisian Ministry of Defense. They have already completed a trench and dirt berm down the northern length of Tunisia's inhospitable border with

Libya, as well as a number of "strong points" that will fill in between and reinforce existing National Guard border posts. The project is also leveraging the authorities Congress has provided for accepting outside funds to apply approximately $19 million in German funding to complete the border surveillance system along the most vulnerable southern sections of the Tunisia-Libya border.

A final example relates to our efforts with United States Pacific Command (PACOM) to prevent the trafficking of WMD-related materials and components in Southeast Asia – with particular focus on North Korea. In Southeast Asia, CTR has initiated cooperative projects with countries in this region to reduce the maritime WMD proliferation threat and enhance the force protection of U.S. sailors at sea.

CTR programs collaborated with the Governments of Vietnam and the Philippines to develop, install, and sustain the systems to surveil territorial waters and interdict suspicious cargo along some of the most likely WMD proliferation routes. CTR also provided equipment, training, and infrastructure improvements to address any potential deficiencies in WMD detection. To provide context to the suite of these capabilities, DTRA's CBRN Preparedness Program is also working with PACOM to enhance WMD emergency and mitigation capabilities within Da Nang city civil response units through the delivery of relevant training and equipment. CTR provided the same types of enhancements to the Philippines Coast Guard that contributed to the successful interdiction of the North Korean cargo vessel, Jin Teng. In addition, CTR supported the Philippines framework for maritime domain awareness through the construction of the Philippine National Coast Watch Center and substations; providing communications, surveillance, and WMD detection/identification equipment; and installing a common operational picture that has enhanced the Philippines ability to deter, detect, and interdict attempts to traffic WMD and related materials through or near its territorial waters.

In close cooperation with the U.S. Department of State and other interagency partners, the CTR Program is also seeking a determination to authorize CTR Program activities to build the Republic of Korea capability to mitigate WMD threats emanating from North Korea. DTRA will continue to explore opportunities for working with PACOM, U.S. Forces Korea, and other

relevant interagency and DoD entities on potential gaps and requirements for CTR on the Korean Peninsula.

Developing Capabilities through Innovation and Rapid Fielding Approaches

Another shared priority with the Department is our focus on innovation and getting capabilities to the battlefield quickly. This is an area of particular focus for the Under Secretary of Defense for Acquisition and Sustainment, Ellen Lord.

Our ability to rapidly counter new and emerging threats and to consistently maintain the technological upper hand over our adversaries is essential to our national security. But that superiority isn't guaranteed. In fact, it is at risk. The United States now ranks fourth on the World Intellectual Property Organization's list of most innovative countries. More than one-half the PhD's awarded by U.S. engineering schools go to non-U.S. citizens and research indicates that roughly a third of them leave the United States in just five years.

At the end of the day, technological superiority is earned—it is earned in the laboratory and library. It is earned by encouraging innovative businesses to work with the Department. Those are the exact resources that we want to tap. DTRA does not own or operate any functional laboratory, but we are able to select from the full range of national expertise, wherever that may be. Our performers include the Department's laboratories and Department of Energy national labs, contractors, Federally-Funded Research and Development Centers, University-Associated Research Centers, academia, and of course both large and small innovative companies. We provide and operate unique and essential test and evaluation capabilities at government facilities in New Mexico and Nevada to meet our own mission requirements, and those of our various customers and stakeholders.

Our programs respond to the most pressing threat challenges including stand-off detection that seeks to identify WMD or improvised threat materials from safe distances, tracking, and interdiction of threats; modeling and simulation to support weapons effects and hazard predictions; classified support to Special Operations Forces; defeat of WMD and improvised

threat agents and materials; developing technologies to defend against small unmanned aerial systems, and protection of people, systems, and infrastructure against WMD and IED effects.

DTRA's test beds provide unmatched threat-representative target structures and threat-characteristic geologies. We support a number of Service, Joint Staff, and Combatant Command priorities, including development of the Large Caliber Penetrator; expanded tactics, techniques, and procedures for use of the Joint Programmable Fuse; and enhanced U.S. missile defeat capabilities.

DTRA is also focused on the Department's effort to reform business practices to achieve greater performance. One of the great tools that Congress has provided is the rapid capability delivery authorities provided to JIDO. JIDO develops and delivers counter-improvised explosive device capabilities on an abbreviated timeline that gets capabilities to the field much faster than a normal acquisition process. This highly streamlined approach explicitly accepts risk in exchange for acquisition speed. In doing so, some of JIDO's rapid acquisition initiatives are being integrated into some of DOD's standard practices. USD (A&S) Lord has specifically highlighted the JIDO capabilities as a model example of how to deliver performance at the speed of relevancy. Moreover, she has asked DTRA to scale-up a Quick Reaction Capability to address the requirements needed across the spectrum of DTRA mission areas.

Empowering Agency Leadership and Staff

DTRA's fourth priority supports the most valuable asset in the Agency -- its people. I have worked diligently to push decision-making down to the most appropriate level and to empower the Agency leadership and staff while still providing clear accountability. These actions complement the Department's efforts to reduce the number of self-imposed bottlenecks. I also have asked my staff to critically think about how to address problems and be more risk tolerant while remaining in appropriate compliance.

Nuclear Deterrence

One additional area that I want to raise to the Committee is DTRA's focus on the nuclear deterrent. I know that the Committee has been focused on the Nuclear Posture Review and DTRA plays a key role in these areas. While I am limited in what I can say in open session on this topic, I can share with the Committee a few of the capabilities and functions we provide.

For example, DTRA is involved with efforts to secure weapons-usable nuclear materials worldwide, understanding and predicting nuclear weapons effects, and the survivability of United States Nuclear Command, Control, and Communications and other warfighter mission critical systems that must operate through nuclear environments.

DTRA provides nuclear enterprise support to the Department of Defense and Interagency stakeholders that ensures the safety, security, reliability, and effectiveness of the U.S. nuclear deterrent force. Our nuclear experts are supporting sustainment of current and future nuclear deterrent capabilities; implementation of nuclear enterprise review recommendations; and nuclear enterprise recapitalization efforts. We have systems in place to guarantee that we have complete control and accounting of our nuclear weapons at all times.

We also perform oversight inspections of all Air Force and Navy Nuclear Surety Inspection Teams. We make sure the Navy and the Air Force's inspections provide tangible proof that every safety system is in place, maintained and in working order, and put the operations, maintenance and security forces through drills and exercises to ensure that everyone knows their job; they know the proper procedures and they know how to react when the situation changes. Our collective goal is to protect, control and serve the nation with 100% assured predictability, reliability and confidence in our nuclear weapons stewardship.

DTRA leads, supports and participates in numerous joint exercise and training events throughout each calendar year, based on Joint Doctrine, Commanders Objectives and mission requirements. One of the largest of these exercises is the Nuclear Weapon Accident Incident Exercise (NUWAIX). This exercise is a Secretary of Defense directed, combatant command executed, and DTRA planned field training exercise. This annual event exercises a whole of government response involving custodial nuclear weapons or materials. These efforts allow for the

identification of gaps in nuclear weapons accident/incident response capabilities and means and methods to repair those vulnerabilities. NUWAIX involves as many as 1,000 people across the country and includes participants throughout the interagency and state and local participation, when possible. This year we are working with the United States European Command to execute this exercise with our NATO allies to ensure we are prepared to respond globally in support of our forward deployed nuclear deterrent.

Finally, with the release of the Nuclear Posture Review and its associated renewal of focus on the nuclear enterprise, DTRA is initiating a nuclear related human capital initiative to develop the next generation of nuclear expertise.

Conclusion

In closing, I would like to thank the Committee for this opportunity to share some of our recent efforts and accomplishments. There are a number of challenges on the horizon, but I am confident that we will innovate to address these threats. I hope that we will continue to earn the Committee's trust and support. Thank you, again, for the opportunity to be here today. I would be pleased to respond to your questions.