

HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF
VAYL OXFORD

DIRECTOR
DEFENSE THREAT REDUCTION AGENCY

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

Embargoed until February 11, 2020 at 2:30pm

HOUSE ARMED SERVICES COMMITTEE

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

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

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

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

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

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

Activities and Impacts

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

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

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

Strong Nuclear Deterrent

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Decisive Conventional Force

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Competition Below the Level of Armed Conflict

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mission Enabling Functions

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

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

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

Conclusion

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

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