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Ref: 16-F-1214

Mr. Steven Aftergood
Federation of American Scientists
1725 DeSales St. NW
Suite 600
Washington, DC 20036

Dear Mr. Aftergood,

This is our final response to your June 29, 2016, Freedom of Information Act (FOIA) request, a copy of which is attached for your convenience. We received your request on the same day it was submitted and assigned it case number 16-F-1214 for tracking purposes.

The information you requested is enclosed without excision. As this constitutes a full grant of your request we are closing your case in this office. There are no assessable fees in this instance.

Please note that the Office of Government Information Services (OGIS) offers services to requesters who have disputes with Federal agencies. If you have concerns about our handling of your request, please contact OGIS at:

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Additionally, please do not hesitate to contact your Action Officer, Megan Farrell at (571) 372-0409 or megan.b.farrell2.civ@mail.mil, if you have any questions about the foregoing.

Sincerely,

for Stephanie L. Carr
Chief

The Department of Defense Chemical and Biological Defense Program

2016 Annual Report to Congress

The estimated cost of report or study for the Department of Defense is approximately $35,000 for the 2016 Fiscal Year. This includes $28,000 in expenses and $6,850 in DoD labor.

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APPROVED FOR OPEN PUBLICATION BY DEFENSE OFFICE OF PREPUBLICATION AND SECURITY REVIEW (16-C-0766)

Introduction[1] – In accordance with section 1523, title 50 United States (U.S.) Code, the U.S. Department of Defense (DoD) Chemical and Biological Defense Program (CBDP) 2016 Annual Report to Congress provides an assessment of the DoD's overall readiness to fight in a chemical and biological (CB) warfare environment. The DoD faces CB threats that are complex, diverse, and pose enduring risks to the Joint Force and Homeland. The variety, origin, and severity of these threats continues to grow while resources shrink. The DoD protects U.S. Forces against weaponized CB agents and emerging threats using an integrated, layered defense and a risk-informed approach. In order to strike a balance between risk and resources, the DoD integrates capabilities to the maximum extent.

The CBDP Enterprise plays a critical role in the ability of the Joint Force to complete their missions safely and effectively by providing the necessary capabilities to deter, prevent, protect from, mitigate, respond to, and recover from chemical, biological, radiological, and nuclear (CBRN) threats and effects. The CBDP is an integral contributor to a global systems approach to countering weapons of mass destruction (CWMD), providing effective and affordable CWMD capabilities for the U.S. and its partners and allies. Highlighted within this report are some of the many accomplishments of the CBDP in fiscal year (FY) 2015.

Requirements Integration[2] – The Joint Requirements Office for CBRN Defense (JRO-CBRND) supports the Services, Combatant Commands (CCMD), and the Joint Requirements Oversight Council by implementing the Joint Capabilities Integration and Development System (JCIDS) to identify, assess, and approve Joint Military CBRN Defense (CBRND) requirements. FY15 JRO-CBRND highlights include:

- Requirements integration accomplishments, approved requirements, and capability documents included in Enclosure A.
- Eleven completed studies and experiments (detailed in Enclosure A, Table A-2) to inform the development of requirements and investment recommendations to CBDP Enterprise and Service leadership. These recommendations resulted from deliberate and detailed threat-informed, scientifically-grounded, and risk-based assessments.

Science and Technology (S&T) – Scientific knowledge and technological solutions to reduce the chemical, biological, and radiological (CBR) threat to U.S. Forces, allies, coalition partners, and the Homeland are developed by the Joint Science and Technology Office for Chemical and Biological Defense (JSTO-CBD) and the CBDP's three Service Laboratories: Edgewood Chemical Biological Center (ECBC), U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), and U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID). FY15 S&T highlights include:

Basic Research

- Funded basic research in four major focus areas: innovative materials, understanding threats, novel sensing, and countermeasures resulting in 209 published papers, 38 patents, and 261 peer-reviewed presentations.

[1] Title 50 U.S. Code 1523 (a) 1: The overall readiness of the Joint Force to fight in a chemical-biological warfare environment and shall describe steps taken and planned to be taken to improve such readiness.
[2] Title 50 U.S. Code 1523 (b) 3: Measures taken to ensure the integration of requirements for chemical and biological defense equipment and material among the Joint Force.

- Continued research in dynamic multifunctional materials for improved CB protection. Investigated novel materials for binding and catalysis, from nanoparticle-peptide biocomposites to genetically-engineered, nanoscale, and biosilica-immobilized functional materials. Studied the physical and chemical properties and surface phenomena of interactions with chemical warfare (CW) agents.
- Studied the role of gene duplication and amplification in the evolution of antimicrobial resistance in bacteria.
- Investigated noninvasive, transendothelial routes for brain drug delivery, as well as targeting of the blood-brain barrier for neurotoxicant antidotes. Examined nano- and nanostructured materials as active therapeutic vehicles for CB countermeasures.
- Researched nanoelectromechanical systems, molecular motors, nanomechanical resonance sensing, and nanometer imaging to improve detection time, increase medical countermeasure (MCM) effectiveness against a broad spectrum of threats, and provide new modalities for CB solutions.
- Engaged in science, technology, engineering, and mathematics (STEM) activities for grades nine through graduate-level, focusing on historically black colleges and universities and minority-serving institutions and initiatives to engage children from military families. Efforts included the Joint Science and Technology Institute, a two-week in-residence camp for high school students and teachers who conduct a research project within a STEM field with a DoD scientist.
- Provided unique opportunities for talented scientists and engineers to conduct research at DoD service laboratories on projects of interest to the CBDP Enterprise through the National Research Council Research Associateship Program and the Military Internship Program in an effort to develop the future DoD workforce.
- Expedited material transfer to industry for production and successful primate testing of the Marburg filovirus antibody.

Applied Research

- Performed modeling and analysis of the 2014 Ebola outbreak in West Africa for the following scenarios: West Africa Ebola outbreak; the potential for a U.S. outbreak; quantities of therapeutics, vaccines, diagnostic devices, and required materials and courses of action; non-medical interventions; population at risk; evacuation planning; and personal protective equipment (PPE) estimates.
- Finalized and distributed to appropriate interagency partners, human toxicity estimates for select CW agents and non-traditional agents (NTA). The estimates are intended to inform concepts of operations; tactics, techniques, and procedures; key performance parameters / key system attributes; and military exposure guidelines. Interagency cooperation was authorized by a memorandum co-signed by the Deputy Assistant Secretary of Defense for Chemical and Biological Defense and the Deputy Assistant Secretary of Defense for Health Readiness Policy and Oversight.
- Commissioned a study that resulted in the publication of "Application of Modern Toxicology Approaches for Predicting Acute Toxicity for Chemical Defense." The report presents an overall approach for predicting acute chemical toxicity and identifies steps that DoD can take in the next three to ten years to implement a program to quickly assess chemicals for potential toxicity in deployed personnel.

- Developed materials and implemented modifications to garments and masks that provide improved protection against CB agent threats (e.g., self-detoxification; aerosol, liquid, and vapor protection) and reduced thermal burden (e.g., integrated fans and pressurization zones).
- Developed a theoretical model to predict how various chemical agents permeate a surface, and how much contamination will subsequently transfer to a person who comes into contact with that surface, to inform novel decontamination technology development.
- Developed a chemical agent decontamination slurry that can be sprayed onto surfaces (e.g., vehicles) and is removable after having reacted with the agent. The slurry demonstrates the ability to decontaminate such surfaces and may reduce the need for costly disposal measures.

Advanced Technology Development

- Supported the 2014 Ebola outbreak response in West Africa.
  - Delivered the first Transport Isolation System (TIS) to the U.S. Transportation Command (USTRANSCOM), making it possible to transport highly infectious patients from Liberia within 36 to 96 hours of notification.
  - Initiated studies to understand the persistence of Ebola virus in clinical human fluids and on relevant surfaces (e.g., TyChem®, nitrile, stainless steel, airline carpet, and polypropylene plastic, as well as TIS-derived materials) to determine how long contaminated surfaces can serve as a source of transmission, and the efficacy of common decontaminants on these surfaces.
  - Presumptively detected Ebola virus in real time via the Biosurveillance Ecosystem and the 24-Month Diagnostics Challenge demonstration on location in Sierra Leone. These activities demonstrated early warning capabilities through real-time linking of point-of-need diagnostic devices to a cloud-based biosurveillance information system.
  - Successfully completed Phase I clinical evaluation of the CBDP-funded Ebola vaccine candidate, recombinant Vesicular Stomatitis Virus ΔG ZEBOV, paving the way for Phase II/III study in Ebola virus-infected humans. Early published data suggests the vaccine is highly efficacious in preventing Ebola virus infection.
  - Received expedited Investigational New Drug (IND) approval for the JSTO-CBD-funded ZMapp™ from the U.S. Food and Drug Administration (FDA), clearing the use of ZMapp™ in a Phase II safety study in Ebola virus-infected subjects in Liberia.
- Received the first ever FDA approval of a CBDP-funded MCM for a biological threat agent. The JSTO-CBD-funded collaboration between USAMRIID and Bayer Pharmaceuticals led to the approval of AVELOX® to treat patients with pneumonic or septicemic plague resulting from infection by *Yersinia pestis* (the organism that causes plague), or as a prophylaxis for adults at risk of contracting plague.
- Designed and produced the Colorimetric Assay Reader Chemical Agent Self-Test Kit, a prototype device that sends data from a hand-held biological pathogen detector to a commercial smartphone. This device will allow the user to send the results to the user's commander, and incorporate the test results into the Warfighter's medical record in the Nett Warrior System. The Nett Warrior System is an integrated situational awareness and mission command system for use during combat operations.
- Developed new Raman chemical detectors, including the Chemical Agent Raman Detector, to detect and identify aerosolized chemical agents in real time in operationally

relevant environments, and the Raman Agent Monitoring System to detect select trace chemical agents on the ground, while moving at speeds up to 30 miles per hour.
- Designed and developed a sensing technology that detects known and unknown biological organisms and toxins using proteomics mass spectrometry, which identifies specific protein characteristics.
- Developed the Air Filter Residual Life Indicator System, a cartridge-sized air filter that allows personnel to accurately measure residual filter protective capacity, reducing maintenance costs by only replacing filters when needed, as opposed to on a schedule.
- Developed the Empowering the Development of Genomic Expertise (EDGE) System. EDGE is designed to assist Service laboratories with conducting genomic analysis of bacteria from complex samples with minimal cost and human resources. The EDGE Bioinformatics software was used to train participants from the Republic of Georgia, Gabon, and Kenya at the Genomics and Bioinformatics Workshop sponsored by the Defense Threat Reduction Agency (DTRA) Cooperative Threat Reduction – Cooperative Biological Engagement Program.
- The Joint Expeditionary Collective Protection (JECP) Product Manager granted accreditation to the JECP System Performance Model version 1.2 for the intended use of supplementing laboratory, chamber, and field test data with simulation results to estimate the CB protection performance of the JECP System and its components.

Techbase Technology Transition
- U.S. European Command assessed and determined that the Trans-Atlantic Collaborative Biological Resiliency Demonstration (TaCBRD) technologies have operational utility to conduct sampling at multiple locations, process samples through multiple laboratories, and return results to support Joint Task Force decisions in a timely manner. TaCBRD technologies subsequently transitioned to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) in March 2015 and to Republic of Poland partners in September 2015.
- USTRANSCOM assessed and determined that the Joint Biological Agent Decontamination System (JBADS) Joint Concept Technology Demonstration (JCTD) transitioned to the JPEO-CBD and subsequently to a program of record with a starting Technology Readiness Level of 7. The JBADS will be deployable world-wide and will use sustained heat and humidity to restore C-130 aircraft to unrestricted use after biological contamination.

Advanced Development and Acquisition[3,4] – The JPEO-CBD is the materiel developer within the CBDP, advancing technologies and prototypes through research and development to procurement programs that provide validated CBRND products to the Military Services. JPEO-CBD's Joint Project Managers (JPM) are organized by specific chemical and biological

[3] Title 50 U.S. Code 1523 (a) 2: Requirements for the chemical and biological warfare defense program, including requirements for training, detection, and protective equipment, for medical prophylaxis, and for treatment of casualties resulting from use of chemical or biological weapons.
[4] Title 50 U.S. Code 1523 (b) 2: The status of research and development programs, and acquisition programs, for required improvements in chemical and biological defense equipment and medical treatment, including an assessment of the ability of the Department of Defense and the industrial base to meet those requirements.

defense focus areas for materiel advanced development. FY15 JPEO-CBD highlights, organized by JPM, include:

JPM Guardian (JPM GN)

- Awarded a contract for the Engineering and Manufacturing Development (EMD) component of the Common Analytical Laboratory System (CALS) program and completed a Critical Design Review (CDR) of the program's Analytical Capability Sets (ACS) variant. Completion of the CDR signifies the ACS can proceed into fabrication, demonstration, and testing. CALS is a deployable suite of laboratory equipment that provides field confirmatory analytics in support of multiple users and missions.
- Demonstrated the ability to integrate physical security, chemical, and biological sensors to support force health protection command decision-making, as part of the early warning component of the Joint United States Forces Korea Portal and Integrated Threat Recognition Advanced Technology Demonstration.

JPM Information Systems (JPM IS)

- Achieved Milestone (MS) B for the Joint Warning and Reporting Network (JWARN) Increment 2 effort, which allows the program to proceed to the EMD phase of the Defense Acquisition Management System. JWARN is a computer-based application that integrates CBRN data and facilitates sensor information into Joint and Service Command and Control systems for battle space situational awareness.
- Achieved MS B for the Global Biosurveillance Portal (GBSP) pending formal program start. GBSP intends to provide an integrated suite of web-based components designed to support situational awareness of biological threats within the comprehensive public health and national defense communities.

JPM Medical Countermeasure Systems (JPM MCS)

- Provided Next Generation Diagnostics System (NGDS) Increment 1 systems to numerous DoD locations in support of the 2014 Ebola outbreak response. DoD was granted Emergency Use Authorization from the FDA to use Ebola diagnostic tests/assays on NGDS Increment 1 systems. The NGDS Increment 1 program also achieved approval of a revised program schedule and streamlined development strategy after resolution of a contract protest.
- Successfully completed human testing for the Phase III clinical trial of the influenza therapeutic MCM within the Emerging Infectious Disease - Therapeutics (EID Tx) program as part of the largest DoD clinical trial ever undertaken. To support efforts to end the Ebola crisis in West Africa, the EID Tx program also issued a contract for submission of an IND application to the FDA and Phase II clinical trial testing of the influenza therapeutic MCM in Ebola virus-infected subjects. The EID Tx program conducted an initial proof-of-concept study on non-human primates to explore the potential efficacy of the influenza therapeutic MCM against the Marburg virus. Study results showed a survival rate of 83% for treated animals versus 0% for non-treated animals.
- Supported a major public heath effort via the orphan drug BabyBIG®, a human-derived botulism antitoxin (approved and licensed by the FDA) for the treatment of infant botulism. BabyBIG® consists of the antibodies produced by adult volunteers who receive

a booster of the JPM MCS recombinant botulinum vaccine, currently in advanced stages of development toward FDA licensure.

- The Defense Health Agency (DHA), a newly established combat support agency under the Assistant to the Secretary of Defense for Health Affairs, supported the CBRN community for management of MCM research, development, and acquisition:
  - DHA conducted a validation study on the technology readiness level assessment of an antiviral compound for an emerging Ebola virus disease treatment, which provided assistance toward a MS B decision.
  - The Executive Secretariat, DoD Laboratory Network, served as a central coordinating point for vetting requests for distribution of the U.S. DoD Ebola virus (Zaire species) assays supporting real-time, point of care systems to DoD clinical diagnostic laboratories. Working with JPEO-CBD and the Division of Regulated Activities and Compliance, U.S. Army Medical Materiel Development Activity performed an initial assessment of all distribution requests and coordinated a further review of the requests by the Services' clinical laboratory operations consultants. This vetting/review process ensured appropriate coverage for DoD patient diagnostic and controlled monitoring activities during response operations for the 2014 Ebola outbreak.

JPM Nuclear, Biological, and Chemical Contamination Avoidance (JPM NBCCA)

- Initial Operational Capability for the U.S. Army was accomplished for the Dismounted Reconnaissance Sets, Kits, and Outfits (DR SKO) program. The DR SKO is a set of mission-specific kits that characterize and provide full spectrum CBRN dismounted reconnaissance capability. The system provides detection and identification of CW agents, biological warfare (BW) agents, and combustible gases. It also includes individual personal protective gear, decontamination capabilities, and equipment for marking, sampling, and reporting of CBRN threats.
- Completed the Whole System Live Agent Test (WSLAT) chamber construction and verification at the U.S. Army Dugway Proving Ground West Desert Test Center. The WSLAT chamber will test detectors that warn of airborne biological weapons. WSLAT provides a controlled environment that enables limited open air testing of CB sensors.
- The Joint Biological Tactical Detection System (JBTDS) program achieved MS B, with the approval to proceed to the EMD phase of the Defense Acquisition Management System. Subsequently, a contract was awarded for the EMD phase effort and to conduct a preliminary design review. The goal of JBTDS is to deliver improved point detection and identification capabilities, providing forward deployed units the means to determine if they have been attacked with biological agents.

JPM Protection (JPM P)

- Developed, in collaboration with DTRA, the TIS that supported the DoD response to the 2014 Ebola outbreak in West Africa. Mounted on current military patient support pallets and modified 463L pallets (engineered-to-fit on U.S. Air Force (USAF) mobility aircraft), the TIS is designed to facilitate safe air transports of multiple contagious individuals while protecting the aircrew and aircraft from exposure. The product was acquired under a USTRANSCOM Joint Urgent Operational Needs Statement.

- Fielded Uniform Integrated Protection Ensemble (UIPE) Increment 1 capability to the Special Operations Community. The UIPE Increment 1 CB protective garment offers the Warfighter the ability to tailor the configuration based on the expected threat level, resulting in expanded options for protection of the force while minimizing burdens associated with wearing protective clothing. UIPE Increment 1 offers improvements over legacy CB protection ensembles by providing better operational suitability, reduced thermal burden, and continued protection against CB agents after exposure to petroleum, oils and lubricants, and other environmental contaminants.
- The Joint Service Aircrew Mask–Rotary Wing (JSAM RW) program achieved MS C, approval for entry into the Production and Deployment phase of the Defense Acquisition System. The JSAM RW provides core CB protective capabilities that are tailored to rotary wing airframes. The mask provides face, eye, and respiratory protection from battlefield concentrations of CB agents. It replaces three Service legacy systems (M45, MBU-19, A/P22-14(V)), improves comfort, reduces heat stress, and provides a detachable faceplate enabling exchange in-flight without removing or adjusting other aircrew flight equipment.

Quantities and Capabilities[5] – A total of 841,555 systems were fielded by the JPEO-CBD during FY15 to provide capability to the Joint Force, and 679,370 MCM doses were acquired from the Strategic National Stockpile. These fieldings are listed by product (capability) in Enclosure B. As technologies advance, current and future deliveries consist of more advanced capabilities for the Services. Such modernization portends additional requirements for specialized training.

Industrial Base (IB) – The JPEO-CBD Joint Logistics Advisory Council for Chemical and Biological Defense Industrial Base Working Group (IBWG) core assessment areas included CBDP items (systems), organic IB, and CBRND manufacturers. The IBWG findings show that risks remain that influence and challenge the DoD's ability to sustain the CBRN IB, among them: availability of raw materials, life cycle sustainment costs, changing non-traditional warfare/rogue nation methods, and the uncertain operational tempo created by regional and international CBRN-related events. The operational environment can shift at any time in today's interconnected world, so it is imperative that the IBWG continues to apply a multidisciplinary approach to managing the IB. This approach leverages several disciplines in deconstructing risks/issues to reach solutions in complex situations. The JPEO-CBD IBWG remains a collaborative network developing strategies of risk prevention, mitigation, and resolution.

Test and Evaluation (T&E) – The Deputy Under Secretary of the Army, T&E, as the CBDP T&E Executive, provides T&E oversight and support for acquisition programs and T&E infrastructure, and establishes T&E policy and standards. Key T&E accomplishments in FY15 include:

- Published 11 T&E standards through the Joint Service, federal interagency T&E Capabilities and Methodologies Integrated Process Team (TECMIPT) that reduced risk to

[5] Title 50 U.S. Code 1523 (b) 1: The quantities, characteristics, and capabilities of fielded chemical and biological defense equipment to meet wartime and peacetime requirements for support of the Joint Force, including individual protective items.

acquisition programs and increased confidence in the validity of test data by increasing reproducibility and repeatability of results from disparate laboratories.

- Developed and published, with DoD and interagency coordination and concurrence, a TECMIPT T&E standard for identifying cross-contamination on individuals after removal of PPE in response to the 2014 Ebola outbreak crisis.
- Implemented an improved methodology for identifying and prioritizing T&E capability gaps to better inform the T&E Infrastructure Analysis and Decision Process.
- Coordinated with AOAC INTERNATIONAL to develop voluntary consensus standards for detecting and characterizing *Coxiella burnetii*, Venezuelan equine encephalitis virus, and staphylococcal enterotoxin B. Forty-two subject matter experts from twenty-nine Federal agencies, businesses, and academic partner organizations collaborated on the development of these standards, which were published in September 2015. AOAC INTERNATIONAL is the forum for finding appropriate science-based solutions through the development of microbiological and chemical standards. AOAC standards are used globally to promote trade and to facilitate public health and safety.
- Developed two reciprocal use of test facility partnering agreements with France and Norway in support of existing T&E Program Memoranda of Agreement.
- Coordinated the participation of Israel, Canada, Poland, South Korea, France, and Norway in the Sophos/Kydoimos Challenge, an annual, two-week, outdoor CB sensor collaborative test event held at Dugway Proving Ground.

No individuals have been used as subjects of any CB agent tests in the U.S. since 1975. Human biological agent testing ended on November 25, 1969, and human chemical agent testing ended on July 25, 1975. The Office of Assistant Secretary of Defense for Health Affairs (OASD(HA)) continues to work with the Department of Veterans Affairs to identify and locate previous human test subjects so they can receive appropriate attention. To provide the public with the information on human exposures related to historic CB testing, the OASD(HA) maintains CB exposure databases for the DoD and updates the CB exposures sections of the Environmental Exposures website (http://www.health.mil/Military-Health-Topics/Health-Readiness/Environmental-Exposures) as needed.[6]

Policy, Training, and Education[7] – The Doctrine, Training, Leadership, and Education strategic goal is to continue developing and integrating joint CBRND capabilities that enable the DoD to operate readily with interagency and international partners in support of national military strategies. Enclosure C lists FY15 CWMD, CBRN Responder, and medical personnel training and education courses. Additional CBDP policy, training, and education highlights include:

OASD(HA)

The OASD(HA) continued to support CBRND training courses for healthcare providers and planners through the Defense Health Program at the Armed Forces Radiobiology Research Institute; Defense Medical Readiness Training Institute; USAMRIID; and USAMRICD. The training courses cover a broad spectrum including the Medical Effects of Ionizing Radiation

[6] Title 50 U.S. Code 1523 (b) 9: A description of any program involving the testing of biological or chemical agents on human subjects that was carried out by the Department of Defense during the period covered by the report.
[7] Title 50 U.S. Code 1523 (b) 4: The status of nuclear, biological, and chemical warfare defense training and readiness among the Joint Force and measures being taken to include realistic nuclear, biological, and chemical warfare simulations in war games, battle simulations, and training exercises.

Course, the Field Management of Chemical and Biological Casualties Course, the Medical Management of Chemical and Biological Casualties Course, and the Hospital Management for Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) (HM-CBRNE) Incidents Course.

U.S. Army (USA)

USA continues to develop and provide a training base, preparing Warfighters for rapid response and full-spectrum operations in support of Combatant Commands. The U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) at Fort Leonard Wood, Missouri, identified as an Institution of Excellence by the U.S. Army Training and Doctrine Command, continues to train, educate, and develop the best qualified CBRN Warriors and specialists for the Nation and its international partners. In FY15, the USACBRNS hosted and conducted more than 40 resident and non-resident CBRN courses, graduating more than 6,300 students from all Services and more than a dozen countries. USACBRNS key accomplishments for FY15 include:

- Began implementing credentialing programs to promote expertise and professionalism of Warfighters while they serve and to enhance their marketability when they leave the Service and apply for civilian sector jobs.
- Received re-accreditation from the International Fire Service Accreditation Congress for six competency levels of certification and awarded more than 11,000 certifications.
- Graduated its 77th Warrant Officer from the USACBRNS Warrant Officer Basic Course.
- Completed the development of the CBRN Warrant Officer Advanced Course (WOAC). The first WOAC will be conducted in FY16.
- Hosted CBRN senior leaders from the United Kingdom (U.K.). The visit focused on developing initiatives to further advance U.K. and U.S. CBRN links, cooperation and interoperability, and training opportunities and exchanges between the U.K. Defence CBRN Centre and USACBRNS.

U.S. Navy (USN)

The USN updated training systems plans, course curricula, and shipboard practices using the standards outlined by the current Naval Ships' Technical Manual (NSTM) Chapter 470 for Shipboard BW/CW Defense and Countermeasures. These changes include establishment of shipboard decontamination station training units at the Surface Warfare Officers School (SWOS) Engineering Learning Sites (ELS) in Norfolk, Virginia, and San Diego, California, and updated curricula for decontamination station system operation and maintenance courses. The USN also developed and fielded to all surface ships and SWOS ELS an interactive study guide tool in accordance with the standards outlined in the NSTM 470. In addition, USN filmed 15 CBR system and equipment maintenance training exercises for the current development of training media to be fielded in FY16. These training tools increase the fleets' operational capability and readiness to survive in a CBR environment and are in compliance with DoD Instruction 3150.09, The CBRN Survivability Policy.

USAF

The USAF Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration conducted a comprehensive reassessment of USAF competencies for educating, training, and exercising the force in CWMD. This effort aligned the CWMD competencies with the Air Force Universal Task List and Air Force Mission Essential Tasks. The result was a 48 percent reduction, through

consolidation and modification of education, training, and exercise competencies and the publication of those revised competencies as Air Force Manual 10-2605, Education, Training, and Exercise Competencies for Counter Chemical, Biological, Radiological, and Nuclear Operations. This effort targeted leadership and airmen and provided unequivocal guidance to ensure the capability to accomplish missions in contaminated environments. The USAF completed several projects that contributed to force readiness, force protection, sustainment, and modernization, including:

- Organized and hosted the Air Force Chemical & Biological Threat Event for key senior leaders, Joint Staff, sister Services, and the Office of the Secretary of Defense (OSD). This effort established a common baseline understanding with all stakeholders in setting priorities.
- Developed and conducted new All-hazards Tactics, Techniques, and Applications for a Comprehensive Knowledge and Understanding training course for CBRN airmen.
- Advocated and led the JBADS JCTD.
- Planned and organized an Air Force Demonstration Day for senior leaders from OSD, Joint Staff, USAF, and sister Services, which showed the challenges the USAF faces in performing reconnaissance and surveillance missions and highlighted aircrew challenges in performing flying operations in CBRN protective clothing.
- Led the Air Component of the CASSANDRA exercises hosted by the JRO-CBRND to assess risk associated with various warfighting scenarios. As part of the CBRN Master Plan Roadmap System, the USAF is finalizing a CBRN-related gap analysis report that contains desired performance specifications with accompanying operational rationale for CBRN-related equipment that will drive future USAF inputs to the JCIDS process.

U.S. Marine Corps (USMC)

The USMC incorporated CBRN awareness and understanding into training and readiness manuals at all levels of training and operational planning and trained Marines using the individual training standards outlined in the Marine Corps Common Skills Manual and Marine Corps Order 3400.3G, CBRN Defense Training Requirements. Due to an update in the CBRN Training and Readiness Manual, CBRN specialists received increased training with the USACBRNS in hazardous materials operations, resulting in an increased certification level for participants. All required Marines completed a CBRN individual protective equipment confidence exercise and participated in collective CBRN training during exercise and pre-deployment training. The CBRN Planner Course was established to train Staff Non-Commissioned Officers as CBRN Planners. The revised collocated and consolidated training courses at Fort Leonard Wood have been recently accredited by the American Council for Education. The USMC is developing a revised CBRND Operating Concept to address the objectives of Expeditionary Force 21 and Cooperative Strategy for 21st Century Seapower-Marine Forward and Ready: Now and in the Future. The developing concept specifically addresses the means, ways, and ends of improving the capability to train, organize, and equip the Marine Air Ground Task Force (MAGTF) to operate and succeed in an operational environment where weapons of mass destruction (WMD) are present or where CWMD is the primary mission of the MAGTF.

Chemical Weapons Convention (CWC) and Inspection Readiness[8,9] – In addition to working with international partners and the Organisation for the Prohibition of Chemical Weapons (OPCW), the DoD continues to provide support around the world to reduce chemical weapons threats in compliance with Article X of the CWC. In FY15:

- Hosted 17 OPCW inspections and visits to chemical weapons storage, Schedule 1, and destruction facilities. The inspections ensured no undetected removal of chemical weapons from the facilities and that the amount of Schedule 1 chemicals for purposes not prohibited by the CWC did not exceed the U.S. maximum of 1 ton of each agent.
- Provided training sessions to inspectors from the OPCW.
- Provided chemical weapon detection equipment and/or assistance in the transportation, storage, and destruction of chemical weapons to other State Parties and Russia, Albania, Libya, and Syria under the DoD's Cooperative Threat Reduction Program.
- Worked with international partners and the OPCW United Nations Joint Mission to help destroy declared Syrian chemical agents and precursors.
- The DoD, Military Departments/Services, and Components maintain CWC implementation and compliance plans by conducting exercises to ensure that all elements are fully prepared for a challenge inspection under the CWC.
- The ECBC Forensic Analytical Center, one of only two OPCW-designated laboratories in the United States, successfully passed its April 2015 OPCW Proficiency Test with their twenty-first "A" score.

Defense Advanced Research Projects Agency (DARPA) Coordination[10] – The CBDP collaborated with DARPA by providing programmatic updates, presentations, and technical expertise in the areas of threat reduction, biodefense, diagnostics, viral forecasting, regulatory reviews, and biosurveillance. In FY15, DARPA and JSTO-CBD partnered to support paper-based diagnostics and improved diagnostic reagent robustness for use in austere environments. DARPA hosted and attended joint meetings with JPEO-CBD, USAMRIID, and USAMRICD to review efforts, which included innovative diagnostic sample collection, preservation, and analysis technologies for maturation to address specific Warfighter needs.

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[8] Title 50 U.S. Code 1523 (b) 7: A description of the chemical warfare defense preparations that have been and are being undertaken by the Department of Defense to address needs which may arise under article X of the Chemical Weapons Convention.

[9] Title 50 U.S. Code 1523 (b) 8: A summary of other preparations undertaken by the Department of Defense and the On-Site Inspection Agency to prepare for and to assist in the implementation of the convention, including activities such as training for inspectors, preparation of defense installations for inspections under the convention using the Defense Treaty Inspection Readiness Program, provision of chemical weapons detection equipment, and assistance in the safe transportation, storage, and destruction of chemical weapons in other signatory nations to the convention.

[10] Title 50 U.S. Code 1523 (b) 10: A description of the coordination and integration of the program of the Defense Advanced Research Projects Agency (DARPA) on basic and applied research and advanced technology development on chemical and biological warfare defense technologies and systems under section 1522(c)(2) of this title with the overall program of the Department of Defense on chemical and biological warfare defense, including—(A) an assessment of the degree to which the DARPA program is coordinated and integrated with, and supports the objectives and requirements of, the overall program of the Department of Defense; and (B) the means by which the Department determines the level of such coordination and support.

Path Forward[11,12] – Current DoD efforts strengthen and expand CBRND capabilities to prevent, protect against, mitigate, respond to, and recover from CBRN threats and effects as part of an integrated, layered defense, as well as improve the Warfighter's ability to find, track, interdict, and eliminate CBRN weapons or emerging threats. FY15 highlights of CBDP efforts to improve the effectiveness and efficiency of the program include:

- Conducted Information System Deep Dives to determine the adequacy of CBDP-developed Information Systems to enable decision-making.
- Capitalized on engagements between DoD and international, interagency, and domestic partners to maximize CBDP efforts.
- Developed a Better Buying Power (BBP) 3.0 Traceability Matrix to track BBP efforts in the CBDP to identify activities, projects, and efforts across the Enterprise that drive innovation, affordability, and technical excellence.
- Continued to increase focus on Warfighter/user needs through demonstrations, "scientists in the foxhole" events, and visits by senior CBDP leaders to training and exercise events with the Warfighter.

The CBDP will continue these efforts in FY16 and utilize Enterprise Reviews to streamline problem identification and decision making. The Enterprise Reviews will address high-level concerns and items of interest across the CBDP Enterprise.

Notably in 2015, the DoD became aware that viable *Bacillus anthracis* spores, believed to have been inactivated, had been shipped from a DoD laboratory. The DoD rapidly responded by implementing a moratorium on the production, handling, testing, and shipment of inactivated anthrax and conducted a comprehensive Enterprise review of DoD laboratory procedures, processes, and protocols associated with handling biological select agents and toxins (BSAT). The DoD designated the Secretary of the Army as the Executive Agent to lead the DoD BSAT Biosafety Program. A task force was established that leveraged the best subject matter experts inside and outside the DoD to recommend necessary changes that will ensure the long-term safety and security of the DoD BSAT Biosafety Program. The implementation actions from this task force will be published in new or revised DoD and Service policies and directives beginning in 2016 and will be implemented by the Army Office of the Surgeon General, designated by the Secretary of the Army as the Executive Agent Responsible Official.

Reduced defense spending will constrain the ability of the CBDP to develop, procure, and sustain Joint Service priority capabilities that improve the ability of the Warfighter to counter CBRN threats. The combination of evolving CB threats, reduced budgets, and uncertain fiscal futures forces the CBDP to focus its limited resources to address the highest priorities and greatest risks. This environment translates into increasingly complex program management decisions with no margins for error due to a lack of sufficient and predictable resources. The CBDP relies on a highly specialized base of expertise to research, develop, test, evaluate, acquire, field, train, and maintain the capabilities to counter current and emerging threats.

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[11] Title 50 U.S. Code 1523 (b) 6: Problems encountered in the chemical and biological warfare defense program during the past year and recommended solutions to those problems for which additional resources or actions by the Congress are required.

[12] Title 50 U.S. Code 1523 (b) 5: Measures taken to improve overall management and coordination of the chemical and biological defense program.

Maintaining this unique historical knowledge while developing the future technical experts and leaders in niche areas has become increasingly difficult as resources have declined and government technical positions have become less attractive for recruiting. The CBDP continues to seek efficiencies in all areas to ensure a capable base of infrastructure is maintained while delivering improved capabilities to counter CB threats and risks to our Warfighters and the Nation.

The DoD will continue to develop and field transformational capabilities, provide operational capabilities to the Joint Force, sustain the Force to operate jointly and effectively, and improve management practices that fulfill Enterprise strategic roles and missions. In doing so, the DoD will reduce the risk associated with catastrophic CBRN events and minimize WMD effects at home and abroad. The CBDP's FY15 accomplishments continue to align with national military strategies and strategic guidance in support of measures aimed at better understanding potential threats, securing and reducing dangerous materials whenever possible, preventing potential attacks, and developing an integrated, layered defense against CBRN threats.

ENCLOSURE A

REQUIREMENTS INTEGRATION ACCOMPLISHMENTS

Table A-1. FY15 Approved Requirements Integration Accomplishments and Capability Document Highlights

TITLE	DESCRIPTION
CBRND Equipment (Non-Medical)	
Common Analytical Laboratory System Capability Development Document (CDD), Key Performance Parameter (KPP) Change	This KPP change removed the radiological attribute for the CDD.
CBRN Dismounted Reconnaissance Sets, Kits, and Outfits, CDD clarification	This clarification memorandum added the requirement to address NTA to the CDD.
JWARN Requirement Definition Package (RDP) - 1	JWARN is an accredited DoD software system that provides a standardized warning and reporting (W&R) capability for CBRN and toxic industrial materials incidents.
JWARN Capability Drop (CD) 1.1	JWARN CD 1.1 develops and fields W&R capabilities identified as requirements in JWARN RDP-1. This CD will support an agile development process in developing user-prioritized capabilities known as additional performance attributes (APA) when they are mature and ready to be fielded.
JWARN CD 1.2	JWARN CD 1.2 continued development and fielding of additional W&R capabilities identified as requirements in JWARN RDP-1. This CD will support an agile development process in developing user-prioritized capabilities known as APAs when they are mature and ready to be fielded.
Joint Effects Model (JEM), CD 1.1	JEM CD 1.1 develops and fields hazard prediction capabilities identified as requirements in JEM RDP-1. JEM is an accredited modeling and simulation system that predicts the effects of CBRN hazards.
Joint Service Aircraft Mask–Rotary Wing, Capability Production Document (CPD)	This CPD defines three KPPs and seven additional performance attributes of a protective mask providing respiratory, ocular, and percutaneous protection from CB agents for rotary wing aircrews.

TITLE	DESCRIPTION
CBRND Medical	
Joint Medical Biological Agent Therapeutic Pharmaceuticals: Filovirus Increment, CDD	This CDD addressed performance attributes for a post symptomatic treatment of the effects from exposure to *Marburg marburgvirus*, *Sudan ebolavirus*, or *Zaire ebolavirus*.
Countermeasures for Multi-Drug Resistant Bacteria, Draft CDD	This CDD addressed performance attributes for a post symptomatic treatment against bacterial BW agents that have demonstrated resistance to available therapeutics.
Countermeasures for Acute Radiation Syndrome, Draft CDD	JRO-CBRND developed and staffed this draft CDD that provides the operational attributes necessary to design a system of prophylactic and therapeutic MCMs to remediate acute radiation syndrome.
Recombinant Botulinum Toxin A/B Vaccine, Tripwire	The Joint Capabilities Board reviewed and approved the schedule, cost, and quantity changes. These changes represent fact-of-life adjustments inherent to vaccine development. This approval revalidated the KPP of FDA licensure.
Joint Medical Biological Warfare Prophylaxes: Plague Vaccine Increment, CDD	JRO-CBRND developed and staffed a revision to this CDD, incorporating a change to the Services' initial operational capability and full operational capability quantities, as well as cost and schedule changes driven by a fourth revised acquisition program baseline for the plague vaccine program.
Next Generation Diagnostic System Increment 1, CDD	JRO-CBRND developed and staffed a revision to this CDD, incorporating non-KPP changes that expanded the scope to include diagnostics for exposure to nerve agent and radiological hazards.

Table A-2. Experiments and Studies

EXPERIMENT/ STUDY	DESCRIPTION	SPONSOR	COLLABORATING ORGANIZATION(S)
Encapsulation	This study provided recommendations to the Services and CBDP leadership on requirements for countering encapsulated chemical or biological threats.	JRO-CBRND, Joint Chiefs of Staff	National Ground Intelligence Center, Defense Intelligence Agency (DIA)
Anti-Material Agents	This study provided recommendations to the Services and CBDP leadership on requirements for countering chemical or biological agents designed to damage sensitive equipment.	JRO-CBRND, Joint Chiefs of Staff	National Ground Intelligence Center, DIA
Chemical NTA Category of Interest	This study was based upon the guidance set forth in the *CBDP Non-Traditional Agent Deference Research, Development, Test and Evaluation Strategy, Fiscal Year 2015 to 2021*. It provided recommendations to the Services and CBDP leadership on requirements for countering a specific NTA category.	JRO-CBRND, Joint Chiefs of Staff	DTRA, National Ground Intelligence Center, DIA
Another Chemical NTA Category of Interest	This study was based upon the guidance set forth in the *CBDP Non-Traditional Agent Deference Research, Development, Test and Evaluation Strategy, Fiscal Year 2015 to 2021*. It provided recommendations to the Services and CBDP leadership on requirements for countering a specific NTA category.	JRO-CBRND, Joint Chiefs of Staff	DTRA, National Ground Intelligence Center, DIA
Toxins Update	This study updated recommendations to the Services and CBDP leadership on requirements for countering biologically-derived toxin threats. Due to information resulting from historical technical research and emerging intelligence, the Joint Staff updated and changed recommendations from the 2014 Toxins Study.	JRO-CBRND, Joint Chiefs of Staff	National Counter-Proliferation Center, National Ground Intelligence Center, DIA
Biological Threat Study	This study provided recommendations to the Services and CBDP leadership on risk mitigation packages to counter infectious biological agents.	Joint Program Executive Office	JRO-CBRND, Joint Chiefs of Staff , National Counter-Proliferation Center

EXPERIMENT/ STUDY	DESCRIPTION	SPONSOR	COLLABORATING ORGANIZATION(S)
Joint Biological Tactical Detection System Requirements	This study refined requirements and provided recommendations that aided in the selection or rejection of materiel approaches by the Joint Program Executive Office.	Joint Program Executive Office	JRO-CBRND, Joint Chiefs of Staff
CASSANDRA 2015 Wargame	This wargame identified CBRN capability gaps in a specific Secretary of Defense (SECDEF)-approved Defense Planning Scenario in support of a classified numbered Operations Plan. It was designed to support the request of the USAF, USMC, and U.S. Pacific Command.	JRO-CBRND, Joint Chiefs of Staff	The Services, Joint Program Executive Office, DTRA
CASSANDRA Homeland Defense	This wargame identified CBRN capability gaps in a specific SECDEF-approved Defense Planning Scenario in support of a classified numbered Operations Plan. It was designed to support the request of the National Guard Bureau and U.S. Northern Command (USNORTHCOM).	JRO-CBRND, Joint Chiefs of Staff	National Guard Bureau, USNORTHCOM
Joint Concept for Preventing the Use or Transfer of WMD	JRO-CBRND developed this concept at the direction of the Director of the Joint Staff in order to provide an innovative framework for future capabilities development of the entire Joint Force.	JRO-CBRND, Joint Chiefs of Staff	Joint Staff J-7, United States Special Operations Command, United States Strategic Command
Integrated Risk Assessment	JRO-CBRND used the results of the above studies, past year's efforts, the CASSANDRA wargames, the DIA CBRN Warfare Capstone Threat Assessment, the CBRN Survey, and the Chairman's Joint Assessment to produce a comprehensive overarching risk assessment for CBDP leadership.	JRO-CBRND, Joint Chiefs of Staff	CCMDs, The Joint Services, Joint Program Executive Office, DTRA, DIA

ENCLOSURE B

FY15 FIELDING QUANTITIES

JPEO-CBD JPM	Product/System	Total Fielded to the Warfighter (Military Services and/or CCMDs)
JPM NBCCA	DR SKO	52
JPM NBCCA	Improved Point Detection System – Lifecycle Replacement (IPDS-LR)	19
JPM NBCCA	M4A1 Joint Chemical Agent Detector	635
JPM NBCCA	M98 Joint Biological Point Detection System (JBPDS)	8
JPM GN	Blauer XRT	5,550
JPM GN	BlauerMT 2012	2,600
JPM GN	CBRNF12B Filter	12,651
JPM GN	HAZMAX Boot	8,351
JPM GN	Lightweight Infl Decon Sys	53
JPM GN	OneSuit Pro	108
JPM P	Uniform Integrated Protection Ensemble Increment 1	22,789
JPM P	Joint Service General Purpose Mask	114,581
JPM P	TIS	25
JPM MCS	NGDS	36
JPM MCS	Joint Biological Agent Identification and Diagnostic System (JBAIDS) Assay Kits	940
JPM MCS	Antidote Treatment Nerve Agent, Autoinjector	670,000
JPM MCS	Soman Nerve Agent Pretreatment Pyridostigmine	3,157
Total Products/Systems Fielded		**841,555**

JPM MCS	Anthrax Vaccine Adsorbed	513,830
JPM MCS	Smallpox Vaccine	165,300
JPM MCS	Vaccinia Immune Globulin	240
Total MCM Doses Acquired from the Strategic National Stockpile		**679,370**

ENCLOSURE C

FY15 CWMD AND CBRN RESPONDER TRAINING AND EDUCATION

JRO-CBRND Sponsored Leader Development and Education Courses	Attendees
Joint and Combined Warfighting School CWMD Focus Study & Purple Guardian Exercise	388
USACBRNS CBRNE Senior Staff Planners Course	27
USNORTHCOM Defense Support to Civil Authorities Mobile Team	354
USA Command and General Staff School, CWMD, & Homeland Security	474
USA CBRN Captain's Career Course WMD-Elimination Table Top Exercises	105
USA CBRN, Engineers, Military Police Chemical Corps Captain's Career Course	941
Joint Senior Leaders' Course	97
USA Engineer Pre-Command Course	57
USA and USAF Command and Staff Colleges, Joint Interagency	227
Joint Land Aerospace Sea Simulation (JLASS) Exercise	130
USMC Command & Staff College, National Response to Catastrophic and Disruptive Threats Exercise	220
Air War College, Global Challenge Exercise	245
Joint Special Operations University, Combatting Terrorism Course	69
USA/USMC CBRN Warrant Officer Basic Course	25
U.S. Coast Guard CBRNE Synchronization Conference	37
USA, USMC, USAF War College JLASS Prep	54
FY15 Total Number of Students	**3,450**

Defense Medical Readiness Training Institute Courses	Attendees
Clinicians Course (distance learning)	17,608
Operator/Responder Course (distance learning)	23,471
Basic Awareness Course (distance learning)	41,371
Executive/Commander's Course (distance learning)	2,037
Clinicians Course (on-site)	389
Basic Awareness Course (on-site)	484
Executive/Commander's Course (on-site)	9
FY15 Total Number of Students	**85,369**

Armed Forces Radiobiology Research Institute Courses	Attendees
Medical Effects of Ionizing Radiation Course	1,023
FY15 Total Number of Students	**1,023**

USACBRNS Courses	Attendees
USACBRNS Distance Learning Courses	
CBRN Specialist	180
CBRN Captains Career (Reserve Component (RC)) Phase 1	81

USACBRNS Courses	Attendees
CBRN Captains Career (RC) Phase 3	34
Biological Integrated Detection System (BIDS)	127
USACBRNS Resident Courses	
CBRN Basic Officer Leader-Branch	293
CBRN Captains Career	100
CBRN Captains Career (RC) Phase 2	42
CBRN Captains Career (RC) Phase 3	35
CBRN Warrant Officer Basic	10
CBRN Warrant Officer Advanced (Begins FY 2016)	0
Basic Radiological Safety	119
Advanced Radiological Safety	44
Radiological Packaging	41
CBRN Recon for Brigade Combat Teams	124
CBRNE Senior Staff Planners (also included in JRO-CBRND sponsored leader development and education courses on p. C-1)	0
CBRN Pre-Command	17
Decontamination Procedures (Non-US)	152
BIDS	98
Joint Senior Leader	97
CBRN Specialist	2,190
Civil Support Team Operations	46
Civil Support Team Pre-Command Course	49
Biological Surety Management (Future Course)	0
Installation Emergency Management Planning	24
Civil Support Skills	200
CBRN Responders	442
CBRN Mass Casualty Decontamination	107
CBRN Dismounted Reconnaissance	92
Technical Escort	261
Analytical Laboratory System Operator	39
Unified Command Suite Operator	13
Shipboard CBR-D Operations & Training Specialist (USN)	123
Nuclear Biological Chemical Defense (USMC)	143
CBRN Basic Warrant Officer (USMC)	3
CBRN Planner (USMC)	5
Emergency Management Craftsman (USAF)	90
Emergency Management Apprentice (USAF)	168
CBRN Advanced Leader Course (ALC) Phase 1	165
CBRN ALC Phase 2	170
CBRN ALC Phase 3	160
CBRN Senior Leader Course (SLC) Phase 1	83
CBRN SLC Phase 2	73
CBRN SLC Phase 3	71
FY15 Total Number of Students	**6,338**

U.S. Army Medical Department Center and School Courses	Attendees
JBAIDS	94
Basic Officer Leaders Course (BOLC) (Active Component)	1,014
BOLC (RC)	389
BOLC (Uniformed Services University of the Health Sciences)	55
BOLC (Health Professions Scholarship Program (HPSP))	370
BOLC (HPSP Veterinary Corps)	16
Radiological Hazards Operators Course	20
Laser Microwave Course	5
U.S. Army Medical Department CBRN Preparedness Overview	1,290
FY15 Total Number of Students	**3,253**

USAF Institute of Technology Courses	Attendees
Principles of Readiness and Emergency Management (Distance Learning)	62
Readiness & Emergency Management Flight Commanders Course (Resident)	39
FY15 Total Number of Students	**101**

USN Courses	Attendees
Damage Control Assistant/Senior Enlist Course (Norfolk, VA)	150
Repair Party Leader Course (Norfolk, VA)	312
Damage Control Assistant/Senior Enlist Course (San Diego, CA)	180
Repair Party Leader Course (San Diego, CA)	338
Damage Control Assistant/Senior Enlist Course (Fort Leonard Wood, MO)	180
JBPDS	98
IPDS-LR	104
JBAIDS (San Antonio, TX)	25
JBAIDS (Shipboard)	14
FY15 Total Number of Students	**1,401**

USAMRICD Courses	Attendees
Field Management of Chemical and Biological Casualties Course	379
Medical Management of Chemical and Biological Casualties Course	321
HM-CBRNE Incidents Course	139
Distance Learning via Defense Connect Online – Webinars	20
Off-Site (Fort Bliss)	38
Off-Site (Fort Hood)	110
Off-Site (Fort Bragg)	50
Off-Site (Fort Bragg)	43
Classified	483
Lebanese Train-the-Trainer Course	10
FY15 Total Number of Students	**1,593**

USAMRIID Courses	Attendees
Field Identification of Bio-Warfare Agents (FIBWA)	18
FIBWA - Civil Support Team	22
FIBWA - Manager's Course	17
FIBWA - EZ (advanced laboratory skills for Ebola response)	40
Field Management of Chemical and Biological Casualties Course	379
Biological Agent Identification and Counterterrorism - Training	29
Medical Management of Chemical and Biological Casualties Course	321
HM-CBRNE Incidents Course	139
Off-Site (Fort Hood)	110
Off-Site (Fort Bragg)	93
FY15 Total Number of Students	**1,168**

ECBC Courses	Attendees
ECBC CBRN Course (WMD-Civil Support Team (CST))	66
Emerging Threats Course (WMD-CST)	88
Target Recognition Course (22nd and 23rd Chemical Battalions)	83
CB-2 Course (22nd Chemical Battalion)	32
Advanced Instrumentation Course (22nd Chemical Battalion)	16
Marine Warrant Officer Course (CBRN School)	8
Army Warrant Officer Course (CBRN School)	10
Advanced Sampling Course (WMD-CSTs and 22nd Chemical Battalion)	16
Exercises (WMD-CSTs)	198
Chemical/Biological Production Recognition and Sampling (NSA)	40
FY15 Total Number of Students	**557**

ENCLOSURE D

ACRONYM LIST

ACRONYM	DEFINITION
ACS	Analytical Capability Sets
ALC	Advanced Leader Course
APA	Additional Performance Attributes
BBP	Better Buying Power
BIDS	Biological Integrated Detection System
BOLC	Basic Officers Leader Course
BSAT	Biological Select Agents and Toxins
BW	Biological Warfare
CALS	Common Analytical Laboratory System
CB	Chemical and Biological
CBDP	Chemical and Biological Defense Program
CBR	Chemical, Biological, and Radiological
CBRN	Chemical, Biological, Radiological, and Nuclear
CBRND	Chemical, Biological, Radiological, and Nuclear Defense
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive
CCMD	Combatant Commands
CD	Capability Drop
CDD	Capability Development Document
CDR	Critical Design Review
CPD	Capability Production Document
CST	Civil Support Team
CW	Chemical Warfare
CWC	Chemical Weapons Convention
CWMD	Countering Weapons of Mass Destruction
DARPA	Defense Advanced Research Projects Agency
DHA	Defense Health Agency
DIA	Defense Intelligence Agency
DoD	Department of Defense
DR SKO	Dismounted Reconnaissance Sets, Kits, and Outfits
DTRA	Defense Threat Reduction Agency
ECBC	Edgewood Chemical Biological Center
EDGE	Empowering the Development of Genomic Expertise
EID Tx	Emerging Infectious Disease – Therapeutics
ELS	Engineering Learning Sites
EMD	Engineering and Manufacturing Development
FDA	U.S. Food and Drug Administration
FIBWA	Field Identification of Bio-Warfare Agents
FY	Fiscal Year
GBSP	Global Biosurveillance Portal
HM-CBRNE	Hospital Management of Chemical, Biological, Radiological, Nuclear, and

ACRONYM	DEFINITION
	Explosive
HPSP	Health Professions Scholarship Program
IB	Industrial Base
IBWG	Industrial Base Working Group
IND	Investigational New Drug
IPDS-LR	Improved Point Detection System – Lifecycle Replacement
JBADS	Joint Biological Agent Decontamination Systems
JBAIDS	Joint Biological Agent Identification and Diagnostic System
JBPDS	Joint Biological Point Detection System
JBTDS	Joint Biological Tactical Detection System
JCIDS	Joint Capabilities Integration and Development System
JCTD	Joint Concept Technology Demonstration
JECP	Joint Expeditionary Collective Protection
JEM	Joint Effects Model
JLASS	Joint Land Aerospace Sea Simulation
JPEO-CBD	Joint Program Executive Office for Chemical and Biological Defense
JPM	Joint Project Manager
JPM GN	Joint Project Manager – Guardian
JPM IS	Joint Project Manager –Information Systems
JPM MCS	Joint Project Manager – Medical Countermeasures
JPM NBCCA	Joint Project Manager – Nuclear, Biological, and Chemical Contamination Avoidance
JPM P	Joint Project Manager – Protection
JRO-CBRND	Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense
JSAM RW	Joint Service Aircrew Mask Rotary Wing
JSTO-CBD	Joint Science and Technology Office for Chemical and Biological Defense
JWARN	Joint Warning and Reporting Network
KPP	Key Performance Parameter
MAGTF	Marine Air Ground Task Force
MCM	Medical Countermeasure
MS	Milestone
NGDS	Next Generation Diagnostics System
NSTM	Naval Ships' Technical Manual
NTA	Non-Traditional Agent
OASD(HA)	Office of the Assistant Secretary of Defense for Health Affairs
OPCW	Organisation for the Prohibition of Chemical Weapons
OSD	Office of the Secretary of Defense
PPE	Personal Protective Equipment
RC	Reserve Component
RDP	Requirement Definition Package
S&T	Science and Technology
SECDEF	Secretary of Defense
SLC	Senior Leader Course

ACRONYM	DEFINITION
STEM	Science, Technology, Engineering, and Mathematics
SWOS	Surface Warfare Officers School
T&E	Test and Evaluation
TaCBRD	Trans-Atlantic Collaborative Biological Resiliency Demonstration
TECMIPT	T&E Capabilities and Methodologies Integrated Process Team
TIS	Transport Isolation System
U.K.	United Kingdom
U.S.	United States
UIPE	Uniform Integrated Protection Ensemble
USA	U.S. Army
USAF	U.S. Air Force
USACBRNS	U.S. Army Chemical, Biological, Radiological, and Nuclear School
USAMRICD	U.S. Army Medical Research Institute of Chemical Defense
USAMRIID	U.S. Army Medical Research Institute of Infectious Diseases
USMC	U.S. Marine Corps
USN	U.S. Navy
USNORTHCOM	U.S. Northern Command
USTRANSCOM	U.S. Transportation Command
W&R	Warning and Reporting
WMD	Weapons of Mass Destruction
WOAC	Warrant Officer Advanced Course
WSLAT	Whole System Live Agent Test