Center for the Study of Weapons of Mass Destruction

ACADEMIC CATALOG

2017

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About the WMD Center

Established in 1994, the Center for the Study of Weapons of Mass Destruction (CSWMD) is at the forefront of education and research on the impact of weapons of mass destruction (WMD) on U.S. and global security. Originally focused on threats to U.S. military forces, the Center now applies its expertise and experience to the full range of WMD challenges.

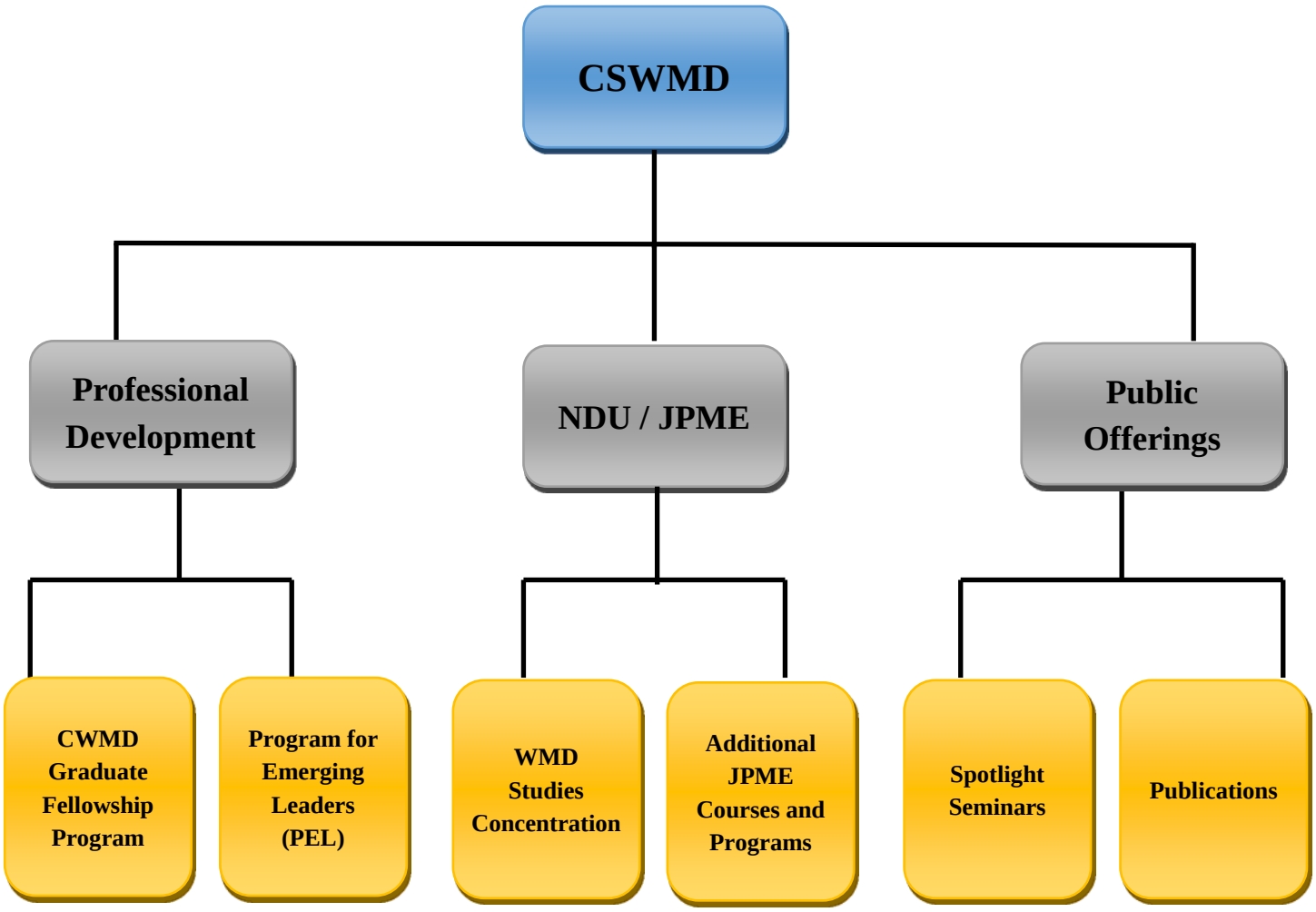
The Center maintains a broad mandate for education, research, and outreach, and pursues ambitious initiatives in these areas. Its research contributes to the understanding of the security implications of WMD, as well as to the challenge of fashioning effective responses. The Center is actively engaged on pressing and emerging WMD issues, such as interdiction, elimination, consequence management, deterrence, and escalation management. It also examines responses to new and evolving WMD threats, including nuclear terrorism, bioterrorism and nontraditional agents, and assists combatant commands in preparing to deal with the operational impact of chemical and biological weapons.

Through its education, research, and outreach programs, the Center seeks to enhance awareness in the next generation of military and civilian leaders of the WMD threat. At the direction of the Chairman, Joint Chiefs of Staff, the Center is the focal point for WMD matters in Joint Professional Military Education. In addition to the Center's courses on countering WMD and consequence management at National Defense University, staff members also lecture on WMD issues widely and across the academic and operational spectrum. The Center is building a cadre of future leaders knowledgeable about WMD through its innovative Program for Emerging Leaders. It also administers a unique Master of Science in WMD Studies program for DoD personnel in conjunction with Missouri State University. The Center further hosts an annual symposium and monthly WMD Spotlight Seminars to address topical WMD issues, as well as other conferences, workshops, and seminars throughout the year.

Overview of WMD Center Academic Programs

The Center for the Study of Weapons of Mass Destruction (CSWMD) serves as a focal point for WMD education in the Department of Defense. CSWMD helps build and sustain a DoD community committed to improving WMD education. The WMD Center offers five elective courses to National Defense University (NDU) students; manages NDU's WMD Studies Concentration certificate program; develops education materials for the joint professional military education community; and facilitates the integration of CSWMD research results into education activities. The Center also runs two stand-alone innovative academic programs: the CWMD Graduate Fellowship Program (a regionally-accredited master's program in WMD Studies) and the Program for Emerging Leaders (a certificate program in WMD studies for future senior leaders from across the Federal Government). Additionally, the Center leads and supports research efforts related to the countering WMD and nuclear deterrence missions.

CSWMD academic programs fall into three different categories: professional development programs, NDU and other JPME courses, and public offerings. Professional development programs are available only to those who meet the minimum requirements laid out for each program, apply to the program and are accepted. JPME courses are available only to students enrolled at the institutions where they are offered. Public offerings include seminars and publications, which are available to the general public, except when precluded by classification.



CWMD GRADUATE FELLOWSHIP PROGRAM

Program Synopsis and Objectives:

The CWMD Graduate Fellowship Program is a two-year graduate program, culminating in a Master of Science Degree in WMD Studies. Sponsored by the Office of the Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense, the Fellowship's primary aim is to build an enduring cadre of national security leaders intellectually and experientially equipped to meet future WMD challenges and to function in an interagency capacity in support of the US Government's CWMD mission. This academic program is conducted jointly by the Center for the Study of Weapons of Mass Destruction and the Missouri State University (MSU) Graduate Department of Defense and Strategic Studies.

Eligibility:

The CWMD Graduate Fellowship Program welcomes applications from:

- Uniformed personnel in the grades of WO4 or WO5 and O-3—O-6
- DoD civilian in the grades of GS-12—GS15
- Contractors and non-DoD personnel who are of equivalent ranks to those listed above and are able to provide their own funding. DoD funding is limited to DoD personnel only.

Applicants must:

- Posess a bachelor degree
- Posess a final SECRET clearance
- Secure the permission *and support* of their supervisory chain to depart their workplace in time to:
    - Arrive at the MSU campus in Fairfax, Virginia and the NDU campus in Washington, D.C. in time for evening classes beginning at 6:00 PM
    - Attend the CWMD Fellows Colloquium conducted at NDU over the two-year period of the Fellowship. The Colloquium meets for seminars totaling 102 classroom hours. The seminars are held approximately monthly during regular business hours on Thursdays or Fridays at NDU. Historically, most supervisors have recognized the propriety of counting seminar attendance as professional development time

Program Overview:

This two-year program is structured so as to enable people working full time, but also deeply committed to ongoing professional education, to complete the entire academic experience in 24 fast-paced months. The Master of Science Degree in WMD Studies consists of 12 courses totaling 36 graduate semester hours.

CWMD GRADUATE FELLOWSHIP PROGRAM *(Continued)*

CWMD Fellows selected to participate in the Master of Science Degree program are required to complete:

- an intensive graduate writing seminar in international security affairs;
- an internship associated with their regular DoD employment;
- an additional two-semester CWMD colloquium taught at NDU;
- four additional courses on WMD-related topics; and

EITHER a master's thesis OR a substantive research project coupled with a comprehensive oral examination. Most CWMD Fellows find that their schedules best lend themselves to the research project/comprehensive oral examination option.

In cases where students, due to unexpected changes to their availability (ie. prolonged illness, deployments, etc) are unable to complete the entire program after the first year, a one-year Graduate Certificate in Countering Weapons of Mass Destruction is offered.

Year-by-year course requirements are as follows:

Year 1 (Five Required Courses)

- DSS 601: Seminar on Nuclear Strategy and Arms Control
- DSS 722: Emerging Strategic Challenges ***or*** DSS 725: Instruments of State Power
- DSS 723: Counterproliferation
- DSS 727: Chemical and Biological Warfare ***or*** DSS 827: Advancced Chemical and Biological Warfare
- DSS 798: Seminar on Contemporary Defense Issues: CWMD Graduate Fellows Colloquium

Year 2 (Three Required Courses and Four Electives)

- DSS 632: International Security Affairs (Required – This course is an intensive national security writing course taken in the fall of each student's second year.)
- DSS 720: Internship Training in DSS Policy (Required – This course is used to help each student further explore the applicability of his/her job to the US government's broader CWMD mission)
- DSS 798: Seminar on Contemporary Defense Issues: CWMD Graduate Fellows Colloquium (required)
- Sample electives include:
  - U.S. Strategy and Defense Policy
  - Science, Technology and Defense Policy
  - Arms Control: Theory and Practice
  - Congress, National Security and Weapons of Mass Destruction
  - Emerging Strategic Challenges
  - Intelligence, Counterintelligence, and Covert Action
  - Missile Defense, Proliferation and Contemporary Warfare
  - Instruments of State Power
  - Ethics and Weapons of Mass Destruction

CWMD GRADUATE FELLOWSHIP PROGRAM *(Continued)*

Time Requirements:

All classes are taught in the evenings (6:00 – 9:00 PM), with the exception of a once-a-month colloquium that typically meets on Friday afternoons during the academic year. Most Fellows take two classes each semester and two summer courses. As a result, most students can expect to be in class (typically at the MSU campus in Fairfax, VA) two nights per week during the academic year.

In order to provide additional flexibility for students in the CWMD Graduate Fellowship Program and reduce the requirement for in-person attendance at classes in Fairfax, the following features are included in the program offerings:

- Up to nine credit hours (25% of the degree) can be taken as "directed reading"
- Three hours awarded for thesis or research project/oral examination
- Three credit-hour internship taken at current work place
- Six credit-hour NDU colloquium meets during regular business hours
- Each semester, one course is offered by VTC

Costs:

For Defense Department (DoD) employees, there are no financial costs incurred, either by the student or his/her organization, for participation in the CWMD Graduate Fellowship Program. All tuition, books and course fees are covered by the Office of the Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense.

Employees of non-DoD organizations and contractors must provide their own funding. DoD funding is only available to DoD employees.

Application Information:

The CWMD Graduate Fellowship application season runs from mid-September to early January. Admissions decisions are released to applicants in February. For additional information, including a copy of the CWMD Graduate Fellowship application package and instructions, please see the Fellowship website at http://cwmdgradfellowship.dodlive.mil/.

Program Contact:

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PROGRAM FOR EMERGING LEADERS (PEL)

Program Synopsis and Objectives:

The Program for Emerging Leaders is a three-year, non-resident program. Its primary goal is fostering a community of rising U.S. government leaders with the awareness and skill set to respond to the dangers of WMD. To accomplish its mission, PEL offers members a series of academic and professional development events, along with networking opportunities, aimed at encouraging leadership development and a deeper understanding of WMD issues.

Eligibility:

Aspiring PEL members must meet the following criteria:

- Be mid-career US government employees, civilian GS-11 to GS-13 (or equivalent civilian ranks) or commissioned military officers O-3 or O-4
- Have a minimum of a bachelor's degree
- Have at least three years of post-college professional experience
- Hold a SECRET clearance

PEL accepts applications from eligible candidates from CONUS and OCONUS duty stations / home bases.

Program Overview:

PEL is an event-driven program. Successful completion of the program earns a Certificate of Completion with the option to receive 6 credit hours of graduate credit granted by the National Defense University. To earn the Certificate of Completion, PEL members must attend 90 contact hours of PEL events (approximately 2½ weeks of coursework) over the course of their three-year membership. PEL members who opt in for the graduate credit must complete two written papers and participate in an active learning experience (ie. tabletop exercise or simulation).

PEL offers a variety of educational opportunities for its members, as follows.

Summer Immersion – This required week-long event provides the foundation for each incoming class into the program. New PEL members participate in site visits and attend seminars led by senior leaders and other distinguished WMD experts.

Winter Workshop – This annual two-day workshop provides PEL members with the opportunity to take a deeper look at a specific WMD topic. It is also the primary opportunity for PEL members to engage with the majority of the program's membership, across all current classes.

PEL members participate in an exercise at 2016 Winter Workshop

PROGRAM FOR EMERGING LEADERS *(Continued)*

Site Visits – PEL members will have the opportunity to visit various US government organizations, primarily in the Washington, DC area, during the course of their membership. Site visits generally last between 4 and 8 hours during the work day. These visits help provide additional background on how the US government is organized to prevent, protect against and respond to the threats posted by WMD. Recent site visits have included the Defense Threat Reduction Agency, the Federal Bureau of Investigation, the National Security Agency, the National Biodefense Analysis and Countermeasures Center, and U.S. Northern Command.

Leadership Dinners – These unique events provide PEL members with an opportunity to engage senior leaders in a smaller setting. Past leadership dinner speakers have included Ms. Michelle Flournoy, Mr. Kenneth Myers, Ms. Madelyn Creedon, Ms. Laura Holgate, and Mr. Thomas Countryman.

PEL members meet with the Hon. Madelyn Creedon, Principal Deputy Administrator, NNSA

Program Duration: 3 years (non-continuous)

Time Requirements:

Each PEL member must complete 90 contact hours over the course of his/her three-year membership in the program. Each contact hour of classroom time has an estimated requirement of two hours of reading PEL members will be expected to complete prior to event attendance.

Costs:

There are no costs incurred, other than a person's time, for participation in PEL. The WMD Center will pay reasonable TDY costs for PEL members living and working outside the National Capital Region to attend Summer Immersion and each Winter Workshop. TDY costs are not covered for site visits and leadership dinners, with the exception of occasional site visits that take place outside the National Capital Region.

Application Information:

PEL application season typically runs from mid-September to mid-December. Admissions decisions are released to applicants in March. For additional information, including a copy of the PEL application package and instructions, please see the PEL website at http://pel.dodlive.mil/applying-to-the-program/.

Program Contact:

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WMD STUDIES CONCENTRATION

Program Synopsis and Objectives:

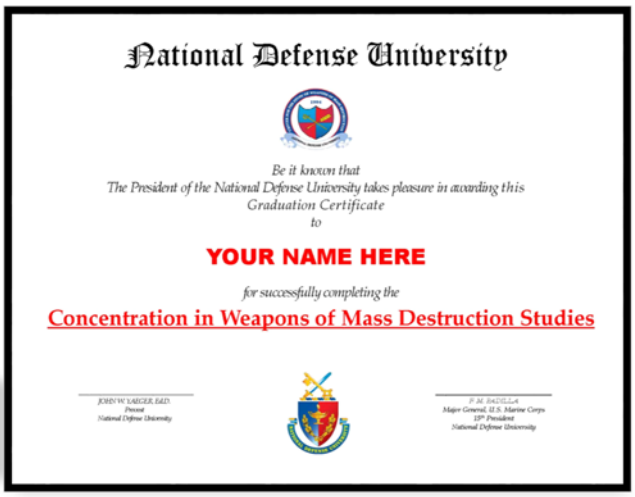
The WMD Studies Concentration allows National Defense University (NDU) students to deepen their knowledge on WMD issues. The primary goal of this concentration is to prepare students interested in WMD to fill assignments in combatant command headquarters, defense agencies and interagency billets.

Program Overview and Eligible Courses:

To complete the concentration requirements, NDU students must take two courses from the list below (one required and an additional elective) as part of their studies.

Required Courses (select one):

- *NDU 6014: Contemporary Issues in Countering WMD: Through the Film-maker's Lens* – This course explores the contemporary challenge of nuclear, biological, and chemical weapons and the American strategic and policy responses to those dangers. The course compares and contrasts perspectives expressed by political authorities, subject matter experts, and the shapers of popular opinion. We will use film (entertainment, documentary, and propaganda) along with official policy documents and the work of subject matter experts to introduce students to the changing face of the contemporary WMD challenge. We will ask why political officials, subject matter experts, and the public often believe very different things about WMD. We will examine when conflicting perspectives between policy makers, subject matter experts, and the public are important and what can be done, if anything, to resolve discord. This course requires two short written papers, high-quality classroom participation, and energetic participation in a classroom tabletop exercise.


National Defense University

Be it known that
The President of the National Defense University takes pleasure in awarding this
Graduation Certificate
to

YOUR NAME HERE

for successfully completing the
Concentration in Weapons of Mass Destruction Studies

- *NDU 6015: The Gravest Danger: Countering Weapons of Mass Destruction* - Countering the threat of weapons of mass destruction from hostile state and non-state actors is a national security priority. This course explores the complex dangers of nuclear, chemical, and biological weapons and the array of tools for countering them. It will address core questions such as: What incentives drive WMD proliferation and how can the United States reduce these incentives? How has the WMD threat changed traditional thinking about deterrence and can terrorist groups such as al Qaeda and ISIL be deterred? The course will also explore efforts to deter, prevent, and defeat proliferation challenges posed by current and potential WMD-armed adversaries, illicit procurement networks, and new WMD technologies. Classes include lectures from experts, seminar discussions, in-classroom exercises, and student research presentations. This is a required course for the University's WMD Studies Concentration.

WMD STUDIES CONCENTRATION *(Continued)*

Elective Courses (select one):

- A second course from the above list of required courses
- *NDU 6016: Consequence Management: Responding to Catastrophic Events* - This elective explores the challenges in preparing and responding to both natural disasters and catastrophic incidents involving weapons of mass destruction (WMD). It considers the policy, organizational, and operational issues confronting local, state, and federal personnel and agencies, and in particular, the supporting role of the Department of Defense (DOD) and the US military in responding to such incidents both domestically and abroad.
- *NDU 6070: Biosecurity and Emerging Biotechnology* – This course will equip national security professionals to understand the fundamentals of emerging biotechnologies and their implications for biodefense, and more broadly, National Security Strategy. Students will use case studies and supplemental readings to analyze the complex dual use issues surrounding biotechnologies and strategic use of policy and guidance in the context of national security.
- *NDU 6071: Thinking About the "Unthinkable": Strategic Weapons, Strategic Warfare, and Enduringly Consequential Choices* – This course uses weapons of mass destruction (WMD) as its vehicle for thinking about the "unthinkable" for a number of very good reasons:
    - First, WMD-related decisions arguably constitute the "limit case" of strategic decision making.
    - Second, virtually all the problems that WMD entail are enduringly consequential.
    - Third, many strategic problems are similar to, but less complicated than, those posed by WMD. (Hence, if you have thought about the enduring consequences associated with this REALLY BIG problem, you probably will be able to apply that understanding to lots of lesser included cases.)
    - Finally, it simply makes good sense for a strategic leader to have thought about the problems explored in this course. This is true even if you are not especially interested in "unthinkable" problems like WMD—because someday, when you least expect it, "unthinkable" problems like WMD may become interested in you.
- Additional Electives: (These electives are offered by other NDU organizations. See the NDU Electives Catalog for additional information.)

    CISA 6910: Nuclear Threat and Response
    NWC 6009: Nuclear Weapons and National Security in the 21st Century
    NWC 6066: Deterrence Theory & National Security
    NDU 6062: Joint Land Air Sea Strategic Special Program (JLASS-SP)

Program Contact:

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UNITED STATES STRATEGIC COMMAND SCHOLARS PROGRAM

CSWMD manages the United States Strategic Command (USSTRATCOM) Scholars Program for the National Defense University.

The USSTRATCOM Scholars Program is available to military and civilian students who are U.S. citizens. The program provides NDU students the opportunity to focus their research and electives on strategic policy and deterrence issues.

Students selected for the program write a research paper on a topic of interest to USSTRATCOM, focus their electives on strategic policy courses, have the opportunity to brief a senior USSTRATCOM leader on their research findings, and receive a Combatant Command Scholars certificate at graduation.

USSTRATCOM supports the program by providing a liaison to assist and funding for travel to facilitate student research. USSTRATCOM's list of topics of interest covers a broad range of research questions on deterrence, assurance, escalation, nuclear policy, arms control, space, and adversary concepts.



Program Contact:

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ADDITIONAL COURSE OFFERINGS

The WMD Center is a member of and manages the WMD Education Consortium, which is comprised of academic and research institutions around the world. Through the Consortium, the Center's faculty members periodically teach classes and provide tailored course content and instruction to other Defense academic institutions, including the US Army War College, the Joint Forces Staff College, the Defense Nuclear Weapons School, and the US Army Command and General Staff College. For additional information about CSWMD academic offerings or the WMD Education Consortium, please contact Dr. Ling Yung, Senior Research Fellow and Education Coordinator for CSWMD, at ling.yung@ndu.edu or 202-433-6513.

WMD Education Consortium Members

SPOTLIGHT SEMINAR SERIES

Program Synopsis and Objectives:

The WMD Spotlight Seminar Series is a monthly professional development forum hosted by the Center for the Study of Weapons of Mass Destruction. The seminar series features senior-level speakers and experts from across the U.S. countering WMD community to discuss topical WMD and national security issues.

Although normally open to the public, the primary objective of the seminar series is to provide U.S. Government personnel with interests or responsibilities in WMD matters the opportunity to receive up to 24 hours of professional development, or the equivalent of a graduate-level seminar, over a two-year period.

Program Overview:

Each Spotlight Seminar is approximately 90 minutes in length and includes a presentation by the featured speaker, followed by questions and discussion. Most seminars take place during the lunch hour.

Past presentations have included:

- *Crisis in the Levant: The Problem of Continued Use of Chemical Weapons:* Dr. Robert Mikulak, former U.S. Permanent Representative to the Organization for the Prohibition of Chemical Weapons (OPCW), will discuss the international response to chemical weapons use in the Levant, the challenges of attribution and accountability, and the implications of persistent small-scale chemical warfare for the Chemical Weapons Convention

Assistant Secretary of State Thomas Countryman presenting at a Spotlight Seminar.

- *Assessing the New Joint Concept for Preventing the Use and Transfer of WMD:* COL Scott Estes, Deputy Director of the Joint Requirements Office for CBRN Defense, Joint Staff (J-8), will present the new Joint Concept for Preventing the Use and Transfer of WMD, which was approved by the Chairman of the Joint Chiefs of Staff for further development and is the first of two planned joint concepts intended to replace the 2007 Joint Integrating Concept for Combating WMD.
- *After the Iran Deal: The Future of the Nuclear Nonproliferation Regime:* The Honorable Thomas M. Countryman, Assistant Secretary of State for International Security and Nonproliferation, discussed U.S. efforts to prevent the spread of nuclear weapons and related materials in the aftermath of the nuclear agreement with Iran.
- *Biosecurity in Southeast Asia: Regional Perspectives and U.S. Policy:* Dr. Gigi Gronvall, Senior Associate, and Ms. Anita Cicero, Chief Operating Officer and Deputy Director of the UPMC Center for Health Security, shared their findings from the first meeting in 2015 of a multilateral biosecurity dialogue between the United States, Singapore, Malaysia, and Indonesia.

Program Contact:

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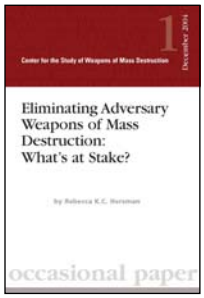
WMD CENTER PUBLICATIONS

All publications can be found on the WMD Center website at http://wmdcenter.ndu.edu/Publications/. To request print copies of any WMD Center publications, please contact Mr. Alex Johnson, Academic Assistant, at alex.johnson.civ@ndu.edu or 202-685-2343.

OCCASIONAL PAPERS



Occasional Paper #1: ***Eliminating Adversary Weapons of Mass Destruction: What's at Stake?****, Rebecca K.C. Hersman (December 2004)*

Overview: The failure to find substantial evidence of nuclear, biological, and chemical weapons in Iraq has exposed serious weaknesses in the U.S. understanding of the weapons of mass destruction (WMD) threat posed by its adversaries as well as in its ability to deal effectively with these threats. A rancorous and highly politicized debate, primarily about the intelligence assessments of Iraqi WMD capabilities before Operation Iraqi Freedom, has dominated national discussion for months. Unfortunately, the current preoccupation with intelligence might mask other issues and shortcomings in the American ability to eliminate the threat posed by weapons of mass destruction in the hands of its enemies.

Events in Iraq did not unfold as many might have expected. The expected "smoking gun" never materialized; large stocks of Iraqi weapons of mass destruction were not strewn throughout the countryside. And, most importantly, neither U.S. forces nor innocent civilians had to face

WMD use. Even so, weapons of mass destruction were very much a condition of this most recent war in Iraq, simply not in the shape and form that many predicted. The Armed Forces had to plan and prepare for conflict as if WMD use was not only possible but also likely. In addition, coalition forces had to prepare to disarm a country of its WMD programs, a mission neither anticipated nor planned for since World War II. This mission has come to be called WMD elimination.

A relatively new mission, or at least a newly rediscovered one (if one includes the precedent of post– World War II Germany), WMD elimination suffered from serious growing pains in Operation Iraqi Freedom: incorrect planning assumptions and intelligence, lack of preparation time, and problems with execution and implementation, among others. Yet there also were demonstrable successes, and there are important lessons to be learned from the Iraq experience.

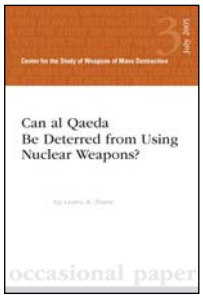
Occasional Paper #2: ***Iraq and After: Taking the Right Lessons for Combating Weapons of Mass Destruction,*** *Michael Eisenstadt (May 2005)*

Overview: Recent proliferation surprises in the Middle East—the failure to find weapons of mass destruction (WMD) in Iraq, Libya's decision to eliminate its WMD, and evidence of significant progress by Iran toward a nuclear weapons capability—underscore the need for the nonproliferation community to reassess some of its key assumptions about WMD proliferation and the nature of the evolving international landscape.

Such a reassessment must be highly speculative. Much about Iraq's WMD programs is likely to remain a mys-

tery due to the destruction of records and the looting of facilities following the fall of Baghdad, as well as the continuing silence of many Iraqi weapons scientists and former government officials. Likewise, the calculations driving key proliferation-related decisions by Libya and Iran remain murky. This lack of knowledge, however, should not inhibit attempts to grasp the implications of these developments for U.S. nonproliferation and counterproliferation policy.

Although this paper focuses primarily on Iraq, it also seeks to draw lessons from recent experiences in Libya and Iran to understand better how proliferators think about WMD; the challenges in assessing the status and sophistication of developing world WMD programs; the contours of the emerging international proliferation landscape; and the efficacy of various policy instruments available to the United States for dealing with these so-called ultimate weapons.



Occasional Paper #3: ***Can al Qaeda Be Deterred from Using Nuclear Weapons?****, Lewis A. Dunn (July 2005)*

Overview: The use of a nuclear weapon would be the ultimate al Qaeda terrorist outrage. Over the past decade, however, the prevailing assessment of the likelihood of terrorist acquisition and use of nuclear (specifically), biological, chemical, or radiological (NBC/R) weapons has been reversed.1 In the 1990s, most policymakers and analysts were highly skeptical of warnings of terrorist use of these weapons. Today, the widespread assumption is that al Qaeda's acquisition of NBC/R weapons would be rapidly followed by their use—that is, employment via the release of an agent, the dispersal of radiological materials, or the detonation of a nuclear explosive. This paper explores that proposition. In so doing, it seeks to illuminate the conditions and calculations that could shape al Qaeda's posture regarding employment of NBC/R weapons, as well as to highlight possible contributions to the overall U.S. war on terror "at the margin" of deterrence.

Occasional Paper #4: ***Defining "Weapons of Mass Destruction",*** *W. Seth Carus (January 2006)*

See Occasional Paper #8 for revised edition.

Occasional Paper #5: ***The Future Nuclear Landscape,*** *Paul I Bernstein, John P. Caves, Jr., and John F. Reichart (April 2007)*

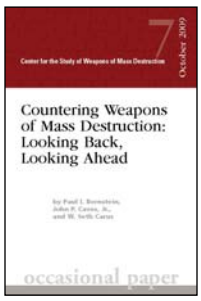
Overview: This occasional paper of the National Defense University's Center for the Study of Weapons of Mass Destruction (WMD Center) examines aspects of the contemporary and emerging international security environment that the authors believe will define the future nuclear landscape and identifies some associated priorities for policymakers. The foundation for the paper is the presentations and discussions conducted during the WMD Center's sixth annual symposium, *The Future Nuclear Landscape: New Realities, New Responses*, held at the National Defense University on May 17–18, 2006. In several areas, the authors have expanded upon those discussions and examined broader issues and considerations shaping the nuclear landscape.

Public Offerings

Occasional Paper #6: ***International Partnerships to Combat Weapons of Mass Destruction,*** *Paul I. Bernstein (May 2008)*

Overview: This occasional paper of the National Defense University's Center for the Study of Weapons of Mass Destruction (WMD Center) examines the role, manifestations, and challenges of international cooperation to combat the weapons of mass destruction (WMD) threat and poses important questions for future leaders to address in moving international cooperation forward in this area.

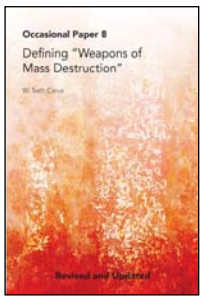
The foundation for the paper is the presentations given and discussions conducted during the WMD Center's seventh annual symposium, *Building International Partnerships to Combat Weapons of Mass Destruction*, held at the National Defense University on May 16–17, 2007. In several areas, the author has expanded upon those discussions and examined broader issues and considerations impacting international cooperation against the WMD threat.



Occasional Paper #7: ***Countering Weapons of Mass Destruction: Looking Back, Looking Ahead,*** *Paul I. Bernstein, John P. Caves, Jr., W. Seth Carus (October 2009)*

Overview: This occasional paper from the Center for the Study of Weapons of Mass Destruction (WMD Center) at the National Defense University (NDU) examines the evolution of U.S. perceptions of the WMD threat and major responses to that threat from the Clinton administration to the first few months of the Obama administration. It also considers why our worst fears for WMD use and proliferation have not been realized and anticipates some of the major WMD challenges that lie ahead.

An important basis for the paper is the presentations and discussions conducted during the WMD Center's eighth annual symposium, *WMD Proliferation and Use: Have We Been Effective, Lucky, or Overly Concerned?*, held at NDU May 7–8, 2008.

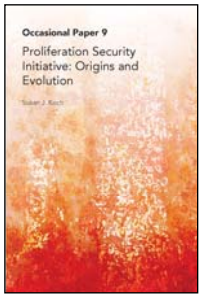


Occasional Paper #8: ***Defining "Weapons of Mass Destruction"*** *(Revised and Updated), W. Seth Carus (January 2012)*

Overview: When the original version of this occasional paper (Occasional Paper #4) appeared in January 2006, DOD was still debating how to revise its WMD definition. Accordingly, the paper focused on framing the issues that confronted DOD in selecting a new definition. This revised edition takes into account developments during the past 5 years, and it reduces the focus on DOD-specific considerations. The result is an updated and reorganized review of the topic intended for readers interested in better understanding issues related to the proliferation and control of weapons of mass destruction.

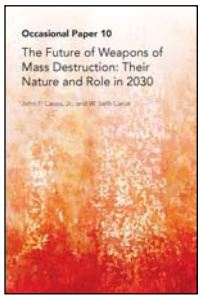
The paper has three main parts. Following a short introduction, the first section describes the origins of the term WMD and its subsequent use in arms control and disarmament negotiations. The second section discusses how the national security and law enforcement communities use the term. A third section dissects the main alternative definitions for WMD, including an assessment of the problems associated with their use.

Public Offerings



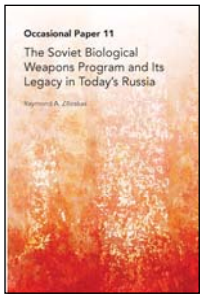
Occasional Paper #9: ***Proliferation Security Initiative: Origins and Evolution****, Susan J. Koch (June 2012)*

Overview: The Proliferation Security Initiative (PSI), a global effort aimed at preventing the trafficking of weapons of mass destruction, was developed unusually quickly, and under unique circumstances. The failure to prevent the North Korean ship, *So San*, from delivering Scud missile components to Yemen in 2002 spurred the U.S. government and the international community to develop the PSI, which significantly improves on previous international WMD interdiction agreements. The importance of unique processes, institutions, and individuals was critical to the rapid successful creation of the PSI. To continue being successful, the United States and other leading PSI states must regain the commitment and momentum that characterized the early years leading to the creation of the PSI.



Occasional Paper #10: ***The Future of Weapons of Mass Destruction: Their Nature and Role in 2030,*** *John P. Caves, Jr. and W. Seth Carus (June 2014)*

Overview: The longstanding efforts of the international community writ large to exclude weapons of mass destruction (WMD) from international competition and conflict could be undermined in 2030. The proliferation of these weapons is likely to be harder to prevent and thus potentially more prevalent. Nuclear weapons are likely to play a more significant role in the international security environment, and current constraints on the proliferation and use of chemical and biological weapons could diminish. There will be greater scope for WMD terrorism, though it is not possible to predict the frequency or severity of any future employment of WMD. New forms of WMD—beyond chemical, biological, radiological, and nuclear weapons—are unlikely to emerge by 2030, but cyber weapons will probably be capable of inflicting such widespread disruption that the United States may become as reliant on the threat to impose unacceptable costs to deter large-scale cyberattack as it currently is to deter the use of WMD. The definition of weapons of mass destruction will remain uncertain and controversial in 2030, and its value as an analytic category will be increasingly open to question.

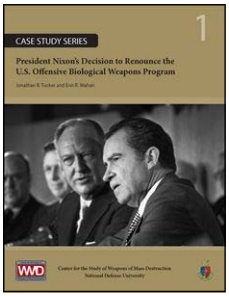


Occasional Paper #11: ***The Soviet Biological Weapons Program and Its Legacy in Today's Russia,*** *Raymond A. Zilinskas (July 2016)*

Overview: In its first Weapons of Mass Destruction (WMD) Case Study, the Center for the Study of Weapons of Mass Destruction (CSWMD) at the National Defense University examined President Richard M. Nixon's decision, on November 25, 1969, to terminate the U.S. offensive biological weapons program. This occasional paper seeks to explain why the Soviet government, at approximately the same time, decided to do essentially the opposite, namely, to establish a large biological warfare (BW) program that would be driven by newly discovered and powerful biotechnologies. By introducing the innovation of recombinant DNA technology— commonly referred to as genetic engineering—the Soviets were attempting to create bacterial and viral strains that were more useful for military purposes than were strains found in nature.

Public Offerings

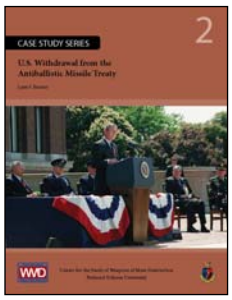
CASE STUDIES



Case Study #1: ***President Nixon's Decision to Renounce the U.S. Offensive Biological Weapons Program,*** *Jonathan B. Tucker and Erin R. Mahan (October 2009)*

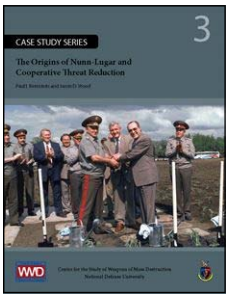
Overview: The nuclear arms race between the United States and the Soviet Union was a prominent feature of the Cold War. A lesser known but equally dangerous element of the superpower competition involved biological weapons (BW), living microorganisms that cause fatal or incapacitating diseases in humans, animals, or plants. By the late 1960s, the United States and the Soviet Union had both acquired advanced BW capabilities. The U.S. biological weapons complex, operated by the U.S. Army Chemical Corps, consisted of a research and development laboratory at Fort Detrick in Maryland, an open-air testing site at Dugway Proving Ground in Utah, and a production facility at Pine Bluff Arsenal in Arkansas that manufactured biological warfare agents and loaded them into bomblets, bombs, and spray tanks.

The U.S. BW arsenal comprised two types of lethal antipersonnel agents (the bacteria that cause anthrax and tularemia); three types of incapacitating agents (the bacteria that cause brucellosis and Q-fever and the virus that causes Venezuelan equine encephalitis); and two types of anticrop weapons (the fungi that cause wheat rust and rice blast). The Army also developed two toxins, highly poisonous chemicals produced by bacteria and other living organisms, including a lethal agent (botulinum toxin) and an incapacitating agent (Staphylococcus enterotoxin B). Because microbial and toxin agents had a limited shelf life, they were replenished on an annual basis. According to U.S. military doctrine at the time, the stockpile of lethal biological weapons served as an in-kind deterrent against enemy biological attack and, if deterrence were to fail, provided a retaliatory capability when authorized by the President. The United States also reserved the option of first use of incapacitating biological weapons and anticrop agents, again with Presidential authorization, although U.S. policy in this area was uncertain and poorly defined.



Case Study #2: ***U.S. Withdrawal from the Antiballistic Missile Treaty,*** *Lynn F. Rusten (January 2010)*

Overview: This case study examines the United States' decision, under President George W. Bush to withdraw from the U.S.-Russia Antiballistic Missile (ABM) Treaty. It explores both the domestic decision-making process and the diplomatic engagements that led to the official withdrawal announcement in December 2001. The author also discusses the impact of the September 11 terrorist attacks on both the decision to withdraw from the ABM treaty and public discourse on the issue. Finally, the paper's epilogue examines the impact the withdrawal decision had on U.S.-Russia relations, including the signing of the Strategic Offensive Reductions Treaty (SORT).



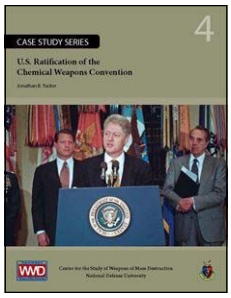
Case Study #3: ***The Origins of Nunn-Lugar and Cooperative Threat Reduction,*** *Paul I. Bernstein and Jason D. Wood (April 2010)*

Overview: Anticipating the possibility of loosely controlled nuclear weapons inside the former Soviet

Union, key leaders in Congress and experts in the policy and academic communities began to

assess the nature of this threat and to consider approaches to reducing the danger it posed to U.S. and global security. Out of these investigations emerged the initial Nunn-Lugar legislation and the broader Cooperative Threat Reduction program—an unprecedented effort to reduce nuclear dangers by securing or eliminating Russian weapons systems and related materials and capabilities using aid from the U.S. Government.

How did Nunn-Lugar come to be? Who were the key leaders, facilitators, and practitioners who recognized the need and opportunity—at a pivotal moment in history—to pioneer a program of cooperative security between two former adversaries? What key insights and lessons can be drawn from the origins of Nunn-Lugar? To answer these questions, this case study recounts initial attempts to aid the former Soviet Union, describes the events leading to the passage of the Nunn-Lugar legislation, and reviews early efforts by the Senators to facilitate implementation of the program.



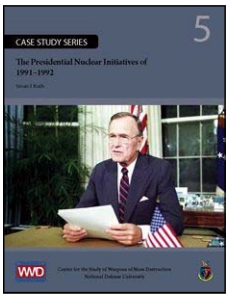
Case Study #4: ***U.S. Ratification of the Chemical Weapons Convention,*** *Jonathan B. Tucker (December 2011)*

Overview: In 1980 the UN Conference on Disarmament in Geneva began negotiating a treaty requiring the elimination of all existing stockpiles of chemical weapons and prohibiting their future development, production, stockpiling, transfer, and use, to be accompanied by stringent international verification measures. Even as the Chemical Weapons Convention (CWC) talks were taking place, however, the Iran-Iraq War (1980–1988) saw the first large-scale use of chemical weapons since World War I, including Iraqi attacks with nerve agents against Iranian troops and Kurdish civilians in northern Iraq. In September 1989, after more than a decade of arduous negotiations, President Bush offered his path-breaking proposals, ushering in the endgame of the talks. The CWC was finally concluded on September 3, 1992, and opened for signature at a ceremony in Paris on January 13, 1993. Secretary of State Lawrence Eagleburger signed the treaty on behalf of the United States in one of the last official acts of the Bush administration.

Although the United States was now one of the 130 original signatories to the CWC, it would not become a full party, subject to all the rights and obligations of the treaty, until the Senate gave its consent to ratification by a two-thirds majority vote. The requirement in the U.S. Constitution that the executive branch of government obtain the approval of the Senate to enter into treaty commitments gives the legislative branch a prominent role in the making of foreign policy. In addition to granting—or withholding—its consent, the Senate can provide advice in the form of legislation accompanying a treaty that interprets certain provisions and specifies how they should be implemented by the executive branch.

The fact that treaty ratification requires a supermajority of 67 votes in the Senate makes it one of the most challenging tasks facing a U.S. President, who often must devote considerable time and effort to achieving an objective that typically pays few immediate political dividends. In the case of the CWC, the task of shepherding the treaty through the ratification process fell to President Bush's Democratic successor, William J. Clinton, who took office one week after the signing ceremony in Paris.1 For various reasons, the CWC proved to be far more controversial than was originally anticipated, and it was not until 4 years later, in April 1997, that the Senate finally gave its advice and consent to ratification. This case study examines the ratification process in detail and addresses the following questions. How did the U.S. Senate finally come to ratify the CWC? Who were the key players and what positions did they seek to advance? How did the shifting political landscape

shape the process and the outcome?

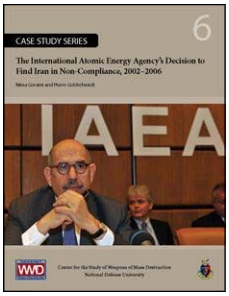


Case Study #5: ***The Presidential Nuclear Initiatives of 1991-1992,*** *Susan J. Koch (September 2012)*

Overview: The termination of strategic bomber alerts was only one of many major changes to U.S. nuclear forces and practices that President George H.W. Bush announced to the Nation in a primetime television address on September 27, 1991. Known as the Presidential Nuclear Initiatives (PNIs), the measures were described as unilateral/reciprocal. That is, the United States intended to act on its own, but also challenged the Soviet Union to take comparable steps. President Bush declared additional PNI actions in his State of the Union address on January 28, 1992. The Soviet and Russian responses came in dedicated television addresses by Soviet President Mikhail Gorbachev on October 5, 1991, and Russian President Boris Yeltsin on January 29, 1992.

President Bush's first PNI announcement was unprecedented on several levels. First, in its scope and scale; it instituted deeper reductions in a wider range of nuclear weapons systems than had ever been done before. Second, the PNIs were primarily unilateral—not to be negotiated, but instead implemented immediately. While Soviet/Russian reciprocity was encouraged, it was not required for most of the U.S. measures. Third, the decisions announced on September 27, 1991, were prepared with a speed and secrecy that had never been seen before in arms reduction, and have yet to be duplicated. The PNIs were developed in just 3 weeks and involved very few people. In contrast, most arms control measures, before and after the PNIs, required months and often years of interagency and international debate and negotiation by scores of military and civilian officials.

Why did this happen, and how was it possible? This case study discusses the general context in which the PNIs were developed, the concerns and goals that motivated them, and the national and international processes that led to them. The focus is on the initial announcement by President Bush, because it was the pathbreaker. The three subsequent declarations by the Soviet Union, United States, and Russia are also addressed, but in less detail.



Case Study #6: ***The International Atomic Energy Agency's Decision to Find Iran in Non-Compliance, 2002-2006,*** *Nima Gerami and Pierre Goldschmidt (December 2012)*

Overview: On August 14, 2002, at a press conference in Washington, DC, the National Council of Resistance of Iran (NCRI), an exiled Iranian opposition group, drew worldwide attention when it publicly accused Iran of clandestinely developing nuclear weapons. Alireza Jafarzadeh, then-U.S. media spokesperson for the NCRI, described two "top secret" nuclear facilities being constructed in Iran at Natanz and Arak under the guise of front companies involved in the procurement of nuclear material and equipment. Noting that media attention had focused on Iran's publicly declared civilian facilities, Jafarzadeh claimed that "in reality, there are many secret nuclear programs at work in Iran without knowledge of the International Atomic Energy Agency (IAEA)," the international body responsible for verifying and assuring compliance with safeguards obligations under the 1968 Nuclear Non-Proliferation Treaty (NPT).

The process for determining non-compliance depends on the technical and legal findings of the IAEA Secretariat—the Agency's technical arm—and the political judgments made by the IAEA Board. However, the lack

of an established definition of non-compliance makes the decision-making process one of the most challenging tasks faced by the IAEA, which has a statutory obligation to report non-compliance to the UN Security Council (UNSC) and the General Assembly. Since the IAEA was first established in 1957, the Agency's Board of Governors traditionally made its decisions based on a rule of consensus widely celebrated as the "Spirit of Vienna." All previous safeguards violations were routinely reported as non-compliance by the IAEA to the UNSC (Iraq in 1991, Romania in 1992, and North Korea in 1993 and 1994). In the case of Iran, it took more than 2 years for the IAEA Board to reach a formal finding of non-compliance. This case study examines the IAEA's approach to determining non-compliance with NPT safeguards agreements, as exemplified by past experience with Iran, and addresses the following questions: How did the IAEA decide to find Iran in non-compliance and refer the case to the UNSC? Who were the primary actors involved and how did they seek to advance their positions? How did the internal politics of the IAEA and changing geopolitical circumstances shape the Agency's decision-making process?

WMD PROCEEDINGS

Countering WMD in the 2010 QDR, *John P. Caves, Jr. (March 2010)*

Overview: Early in 2009, the Center for the Study of Weapons of Mass Destruction assessed the U.S. Government's preparedness to prevent and manage major WMD events. The Center found that the government, including the Defense Department, had made considerable progress over the last decade in preparing to deal with discrete or small-scale WMD incidents, but that it lacked both the quantity of specialized assets and the quality of planning and coordination mechanisms to deal effectively with large-scale WMD contingences. It also found a need to invest more in anticipating, understanding, and countering new and emerging forms of chemical and biological threats.

This paper assesses the 2010 Quadrennial Defense Review (QDR) in part on how it addresses these shortcomings. It also assesses it in relation to the 2006 QDR to identify areas of change and continuity across two different administrations.

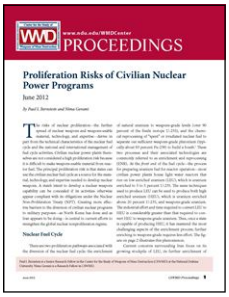
Future Foreign Perceptions of Chemical Weapons Utility, *John P. Caves, Jr. (October 2010)*

Overview: It is inherently speculative to address future foreign perceptions of chemical weapons (CW) utility. This is not only because it concerns things that may be, rather than things that already are, but also because those who might be considering or already pursuing CW capabilities for the future will not be openly sharing their views. Classified sources and assessments also cannot be addressed in this unclassified forum. This paper, therefore, offers some educated guesses about how rational actors might view the future utility of CW on the basis of open source information about relevant technological trends and assumptions about pertinent aspects of the future international security environment.

It is useful to briefly take stock of the present before speculating about the future. Almost all of the world's

countries are state parties to the CWC, which comprehensively prohibits chemical weapons, except nonlethal riot control agents used only for law enforcement purposes and declared as such. Today, only seven states have not acceded to the CWC: Angola, Egypt, Israel, Myanmar, North Korea, Somalia, and Syria.1 Of those seven, Syria and North Korea most evidently maintain active offensive CW programs. Of CWC state parties, the United States has expressed compliance concerns about China, Russia, and Iran.2 On the one hand, almost all of the world's countries appear to have formally and sincerely foresworn chemical weapons. On the other hand, there appear to be a small number of countries that continue to place value on possessing, or at least keeping open their options to possess, CW.

For any type of weapon, and particularly for one proscribed by treaty, three factors should be assessed when attempting to gauge future foreign perceptions of that weapon's utility: the nature of the future threat, effectiveness of the weapon in countering that threat, and opportunity costs of choosing that weapon over other means of response. These three factors are considered in turn.



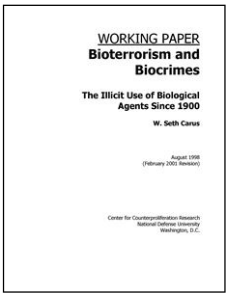
Proliferation Risks of Civilian Nuclear Power Programs, *Paul I. Bernstein and Nima Gerami (June 2012)*

Overview: The risks of nuclear proliferation—the further spread of nuclear weapons and weapons-usable material, technology, and expertise—derive in part from the technical characteristics of the nuclear fuel cycle and the national and international management of fuel cycle activities. Civilian nuclear power plants themselves are not considered a high proliferation risk because it is difficult to make weapons-usable material from reactor fuel. The principal proliferation risk is that states can use the civilian nuclear fuel cycle as a source for the material, technology, and expertise needed to develop nuclear weapons. A state's intent to develop a nuclear weapons capability can be concealed if its activities otherwise appear compliant with its obligations under the Nuclear Non-Proliferation Treaty (NPT). Creating more effective barriers to the diversion of civilian nuclear programs to military purposes—as North Korea has done and as Iran appears to be doing—is central to current efforts to strengthen the global nuclear nonproliferation regime.

Star Wars Rebooted: Global Missile Defense in 2017, *Bruno Gruselle (October 2012)*

Overview: At present and for the near future, missile defense (MD) is not in peril of dismemberment. Indeed, the level of political consensus on the need for a missile defense runs high, as demonstrated by the Obama administration since 2009. But, there probably will be questions about the most appropriate policy and technical options going forward when the President and administration take office in 2017 either as incumbents or new arrivals. While the debate in Washington will probably concern such matters as whether the United States needs a maritime or land-based MD and where within the program the Nation should place its budgetary chips in what could become a very tense financial atmosphere, events elsewhere around the globe may confront the 2017 administration with some delicate strategic dilemmas and force it to make difficult choices.

WORKING PAPERS

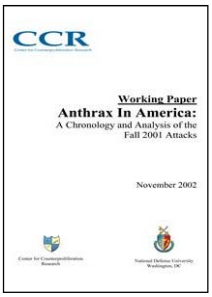


Bioterrorism and Biocrimes: The Illicit Use of Biological Agents Since 1900, *W. Seth Carus (August 1998; revised February 2001)*

Overview: This is the eighth revision of a working paper on biological terrorism first released in August 1998. The last version was released in April 2000. As with the earlier versions, it is an interim product of the research conducted by the author into biological terrorism at the National Defense University's Center for Counterproliferation Research. It incorporates new cases identified through December 31, 2000, as well as a considerable amount of new material on older cases acquired since publication of the previous revision.

The working paper is divided into two main parts. The first part is a descriptive analysis of the illicit use of biological agents by criminals and terrorists. It draws on a series of case studies documented in the second part. The case studies describe every instance identifiable in open source materials in which a perpetrator used, acquired, or threatened to use a biological agent. While the inventory of cases is clearly incomplete, it provides an empirical basis for addressing a number of important questions relating to both biocrimes and bioterrorism. This material should enable policymakers concerned with bioterrorism to make more informed decisions.

In the course of this project, the author has researched over 270 alleged cases involving biological agents. This includes all incidents found in open sources that allegedly occurred during the 20th Century. While the list is certainly not complete, it provides the most comprehensive existing unclassified coverage of instances of illicit use of biological agents.



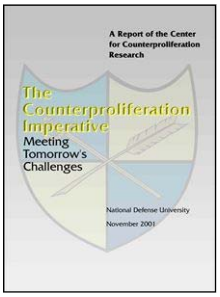
Anthrax In America: A Chronology and Analysis of the Fall 2001 Attacks *(November 2002)*

Overview: The first bioterrorist attack on the United States in the 21st century is revealing in many respects. The government's response to the attacks proved to be a difficult undertaking characterized by a significant amount of on-the-job learning by law enforcement and public health personnel, as well as senior government officials. From the unconventional delivery mode and conflicting estimates of exposure to questions over the appropriate timing and nature of treatment, government agencies frequently provided substantially different, sometimes contradictory, information and advice to those potentially exposed, to the media, and to the public as a whole. Law enforcement officials have reported that the attribution process (tracking and identifying the perpetrator) has been a learning experience as well, forcing the Federal Bureau of Investigation (FBI) to develop new investigative techniques and to reach out to expert communities for assistance. Although they had been preparing in theory for a bioterrorist incident for several years, in practice, public health workers faced substantial diagnostic and medical treatment issues. And in several cases, these preparations were found to be lacking – for example, as the high demands for sample testing met with only modest capability to process them clearly suggests. Perhaps the most important issue area, and the one that requires the most improvement, was the importance of effectively and accurately communicating the nature of the threat and the status of the response efforts to the public.

This document provides a one-year snapshot of the attacks and subsequent response. It examines these issues through a chronological listing of the significant events associated with the anthrax attacks and the statements

made by government officials, health and law enforcement specialists, and other individuals involved in responding to the attacks. All of the sources used in the preparation of this chronology are publicly available, including major national and international newspapers as well as those from the areas directly affected by the attacks.

BOOKS AND REPORTS



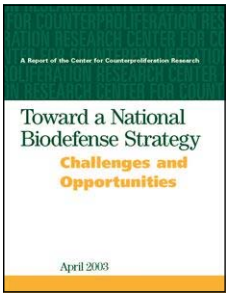
The Counterproliferation Imperative: Meeting Tomorrow's Challenges *(November 2001)*

Overview: The proliferation of nuclear, biological, and chemical (NBC) weapons poses major strategic and operational challenges to the United States and an important political challenge to the international community. In the hands of hostile states, these weapons threaten stability in key regions, put U.S. forces at risk, and undermine the U.S. ability to project power and to reassure friends and allies. Increasingly, the American homeland is at risk as well. U.S. intelligence officials routinely warn that more than a dozen states are actively pursuing offensive chemical or biological weapons programs. Moreover, the 1998 Indian and Pakistani nuclear tests, as well as lingering concerns over the status of the North Korean program, underscore the continuing nuclear aspirations of key states. Many states also seek ballistic and, increasingly, cruise missiles or other platforms capable of delivering NBC payloads. Proliferation trends point to a problem of growing complexity: a deepening of NBC capabilities among current proliferators; the spread of NBC-relevant technologies that comprise "virtual" capabilities for would be future proliferators; and the growing potential for subnational or statesponsored NBC terrorism.

The international nonproliferation regime is likely to have only limited impact in controlling these developments for states determined to acquire, develop, or use NBC capabilities. Indeed, history suggests that determined proliferators will find a way to work around the political and practical constraints they confront. It was for this reason that, in chartering the Defense Counterproliferation Initiative in 1993, Secretary of Defense Les Aspin declared, "we are making the essential change demanded by this increased threat . . . adding the task of protection to the task of prevention." The need to prepare to fight NBC-armed adversaries was a principal lesson of the Gulf War. U.S. and allied forces were inadequately prepared to confront Iraqi chemical and biological weapons, and most of our coalition partners were even less well prepared. Moreover, postwar revelation of the scope of Iraqi NBC activities sent shockwaves throughout the national security community, surprising even "informed" observers and highlighting serious potential vulnerabilities in U.S. regional security strategies and warfighting plans. While Iraq did not, ultimately, use chemical or biological weapons in the Gulf War, its manifest ability to do so, coupled with its evident (and largely undetected) technical progress, underscored the emergence of a major new defense planning challenge.

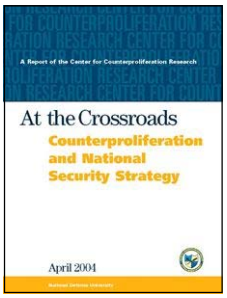
While significant progress has been made in achieving these capabilities since 1993, much remains to be done. This monograph describes the current state of the field with respect to the intelligence, policy, operational, and programmatic issues related to counterproliferation. It seeks to present the counterproliferation imperative within the broader context of strategy and deterrence developing in the Bush administration and highlights key contemporary issues. Finally, the monograph suggests areas for future emphasis in improving our understand-

ing of the NBC threat and in further developing appropriate responses.



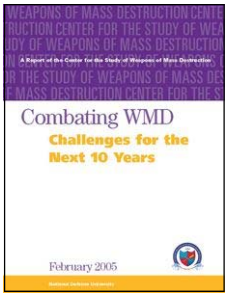
Toward a National Biodefense Strategy: Challenges and Opportunities *(April 2003)*

Overview: The threat posed by biological weapons, while not new, is evolving and does present a series of political, military, technological and psychological national security challenges. While some military and civilian organizations have substantial capabilities in place to help counter the BW threat, others are relative newcomers and have only recently begun to consider their roles in the national biodefense effort. Certainly, the fall 2001 anthrax attacks in the United States triggered an outpouring of resources and captured the attention of the Bush administration as well as the nongovernmental policy community, the media, and the public on BW threats. This monograph assesses the nature of the biological weapons threat and analyzes its broader implications for national security. It articulates the imperative for developing a cogent, robust, and integrated national biodefense strategy and highlights an important set of issues facing the policy, operational, intelligence, and public health communities. Finally, it offers a series of recommendations to understand the changing BW threat and for further developing appropriate responses.



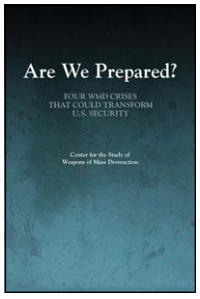
At the Crossroads: Counterproliferation and National Security Strategy *(April 2004)*

Overview: The Center for Counterproliferation Research of National Defense University convened a 2-day conference in May 2003 to examine the impact of new U.S. strategic priorities in the post-September 11 era as described in the National Security Strategy. The conference, entitled "At the Crossroads: Counterproliferation and the New National Security Strategy" drew an audience of more than 150 leading experts from Government, the military, academia, and the private sector. The agenda was structured around the driving imperatives of the President's vision with dedicated panels to address Counterproliferation priorities and included three major presentations. This report is grounded in, but further elaborates on, the presentations and discussion conducted in that forum.



Combating WMD: Challenges for the Next 10 Years *(February 2005)*

Overview: The Center for the Study of Weapons of Mass Destruction (WMD Center) of the National Defense University convened a 2-day conference in May 2004 to examine key challenges that the combating-WMD community will need to address in the coming decade. The conference, entitled Combating WMD: Ten Challenges for the Next Ten Years, drew an audience of more than 150 leading experts from government, military, academia, and the private sector. This report is grounded in, but further elaborates on, the presentations and discussions conducted in that conference.



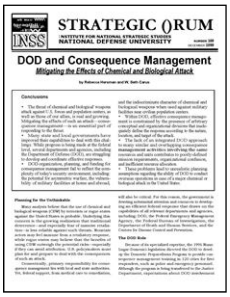
Are We Prepared?: Four WMD Crises that could Transform U.S. Security *(June 2009)*

Overview: This study addresses the ability of the U.S. Government to cope with four plausible, far-reaching weapons of mass destruction (WMD) crises, any one of which could occur today and adversely affect the foreign and national security policies of the United States for many years to come:

- collapse of the nonproliferation regime, in which a number of unresolved nuclear proliferation challenges threaten to unleash a sudden and destabilizing wave of proliferation
- a failed WMD-armed state, creating unprecedented risks that radical actors will obtain WMD and unprecedented challenges for prevention
- a biological terror campaign, in which terrorists employ deadly biological pathogens to strike at multiple cities
- a nuclear detonation in a U.S. city, delivered covertly and leaving great uncertainty about who did it, whether it will happen again, and how we should respond.

Taken together, these scenarios demonstrate the complex, multifaceted nature of the WMD challenge for American decision makers and illustrate the demands that such events could place on the entire apparatus of government, alliances, and the American people.

STRATEGIC FORUMS


STRATEGIC FORUM
INSS
INSTITUTE FOR NATIONAL STRATEGIC STUDIES
NATIONAL DEFENSE UNIVERSITY
DOD and Consequence Management
Mitigating the Effects of Chemical and Biological Attack

Strategic Forum #169: ***DOD and Consequence Management: Mitigating the Effects of Chemical and Biological Attack,*** *Rebecca Hersman and W. Seth Carus (December 1999)*

Overview: The threat of chemical and biological' weapons attack against U.S. forces and population centers, as well as those of our allies, is real and growing. Mitigating the effects of such an attack—consequence management—is an essential part of responding to the threat. Many state and local governments have improved their capabilities to deal with this challenge. While progress is being made at the federal level, several departments and agencies, including the Department of Defense (DOD), are struggling to develop and coordinate effective responses. DOD organization, planning, and funding for consequence management fail to reflect the complexity of today's security environment, including: the potential for asymmetric warfare, the vulnerability of military facilities at home and abroad, and the indiscriminate character of chemical and biological weapons when used against military facilities near civilian population centers. Within DOD, effective consequence management is constrained by the presence of arbitrary conceptual and organizational divisions that inadequately define the response according to the nature, location, and target of the attack. The lack of an integrated DOD approach to many similar and overlapping consequence management activities involving the same resources and units contributes to poorly-defined mission requirements, organizational confusion, and inefficient resource allocation. These problems lead to unrealistic planning assumptions regarding the ability of DOD to conduct overseas operations in case of a major chemical or biological attack in the United States.


Strategic Forum
China Rising: New Challenges to the U.S. Security Posture

Strategic Forum #175: ***China Rising: New Challenges to the U.S. Security Posture,*** *Jason D. Ellis and Todd M. Koca (October 2000)*

Overview: The nature, scope, and viability of the strategic relationship between the People's Republic of China (PRC) and the United States have emerged as leading security policy issues. Among the many reasons for this are: China's evidently growing defense budget and its military modernization campaign; its often threatening rhetoric over Taiwan; its reputed espi-

onage activities; and disputes over collateral security issues, such as China's continuing proliferation of weapons of mass destruction. Furthermore, Beijing's lack of transparency concerning its strategic capabilities and modernization programs, and the intentions that undergird each, make it difficult to confidently forecast China's future direction; yet significant strategic decisions undertaken today will have far-reaching and long-term implications. There is a growing sense among defense analysts and specialists that the future disposition of Chinese strategic forces may only modestly resemble that of the past. Looking ahead, U.S. policymakers must address three central questions: (1) the likely extent of China's strategic modernization; (2) the degree of complementarity of U.S. and PRC regional and strategic interests over time; and (3) the implications of each for U.S. foreign and defense policy.


Strategic Forum

Adversary Use of NBC Weapons: A Neglected Challenge

Strategic Forum #187: ***Adversary Use of NBC Weapons: A Neglected Challenge,*** *John F. Reichart (December 2001)*

Overview: Most informed observers agree that some nations are acquiring NBC capabilities with the intent of using them—whether to threaten or coerce neighbors, to deter nations from interfering in their regions, to seek advantage in time of conflict or war, or even to punish the United States or its allies. Terrorist groups, some with state sponsorship, also have sought to achieve such capabilities. The emerging consensus of the analytic community is that we must increasingly contend with a wide range of potential adversary NBC uses. There is no guarantee, and only a low probability, that the future will resemble the past in this strategic arena.

As a consequence, it is important to think more carefully about how states and nonstate actors may actually use NBC weapons. The approach here is to examine how our thinking about adversary use has evolved in the last decade and the implications this evolution has had.


Strategic Forum

Eliminating Adversary WMD: Lessons for Future Conflicts

Strategic Forum #211: ***Eliminating Adversary WMD: Lessons for Future Conflicts,*** *Rebecca K.C. Hersman and Todd M. Koca (October 2004)*

Overview: The failure to find substantial evidence of nuclear, biological, and chemical weapons in Iraq has exposed serious weaknesses in the U.S. understanding of the weapons of mass destruction (WMD) threat posed by its adversaries and in its ability to deal with these threats. A rancorous and highly politicized debate, primarily about the intelligence assessments of Iraqi WMD capabilities before Operation Iraqi Freedom, has dominated the national discussion of WMD in Iraq for months. Although Iraqi WMD capabilities remain elusive and, indeed, weapons may never be found, elimination operations conducted there provide important lessons.

The United States must begin to develop a permanent capability to plan for and conduct WMD elimination operations. The Department of Defense (DOD) in particular must begin to build such a capability as part of its overall approach to combating WMD proliferation. To be effective, however, DOD must work in concert with interagency partners and avoid a go-it-alone approach to this national priority.

Preserving the knowledge and experience gained in Iraq and Afghanistan and translating them into effective structures and doctrine will be key challenges for military and civilian planners. Incorporating WMD elimination into early planning, ensuring access to key enabling capabilities, providing sufficient time to train units and exercise concepts, and, perhaps most importantly, following a program-centric approach to address the

totality of adversary programs and stockpiles are all critical to future success.


Strategic Forum

Aligning Disarmament to Nuclear Dangers: Off to a Hasty START?

by David A. Cooper

Strategic Forum #224: ***Aligning Disarmament to Nuclear Dangers: Off to a Hasty START?,*** *David A. Cooper (July 2009)*

Overview: Confronted by a daunting array of nuclear threats, and having pledged to reinvigorate the application of disarmament tools to address these dangers, the Obama administration has decided to focus its initial efforts on negotiating a new bilateral agreement with Russia to replace the Cold War–era Strategic Arms Reduction Treaty (START), which expires at the end of this year.

Critics have suggested that reviving the U.S.-Russian strategic disarmament agenda is at best a distraction from a host of more pressing security challenges that the United States needs to address now and in the years ahead. There is no debate that it would be useful from a U.S. perspective to preserve the transparency that START provides. But Washington has little to gain directly, at least in traditional military terms, from further reductions in the legacy arsenal of its erstwhile Cold War adversary. By contrast, for reasons both political and military, Russia has an urgent incentive to achieve a strategic parity through negotiations that it otherwise could not sustain. The key issue thus becomes whether the Obama administration can achieve a modest agreement at little cost, or alternatively leverage the negotiations to gain a wider set of benefits beyond the straightforward bilateral reductions in question.

The analysis deduces that a positive outcome would provide modest ancillary benefits for several higher priority objectives—for example, incentivizing China to participate in a wider follow-on strategic nuclear arms reduction process, or bringing greater international pressure to bear on nuclear proliferators such as Iran. However, these spinoff benefits would not be sufficient to warrant high costs in terms of major concessions of U.S. strategic interests relative to Russia. Any such costs could only be justified by the inclusion of favorable external linkages, meaning explicit Russian offsets to address higher priority nuclear dangers in return for concessions favoring Moscow's strategic interests. The Obama administration will therefore need to carefully weigh this overarching cost-benefit equation as it navigates the complexities of the first major strategic arms control talks in almost a decade.

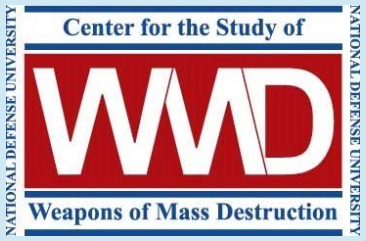

Strategic Forum

Avoiding a Crisis of Confidence in the U.S. Nuclear Deterrent

by John P. Caves, Jr.

Strategic Forum #252: ***Avoiding a Crisis of Confidence in the U.S. Nuclear Deterrent,*** *John P. Caves, Jr. (January 2010)*

Overview: The United States needs to modernize and ensure the long-term reliability and responsiveness of its aging nuclear deterrent force and nuclear weapons infrastructure. It cannot otherwise safely reduce its nuclear weapons, responsibly ratify the Comprehensive Test Ban Treaty, confidently deter and contain challenges from rising or resurgent nuclear-armed near peers, and effectively dissuade allies and partners from acquiring their own nuclear weapons. Modernization is fundamental to avoiding a future crisis of confidence in the U.S. nuclear deterrent.



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