PASCC Workshop on WMD and Strategic Stability, Panel Presentation Abstracts

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United States Institute of Peace (USIP), Carlucci Auditorium
Washington, D.C.
June 6, 2014

Panel Presentation Abstracts

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FUTURE OPPORTUNITIES FOR BIOENGAGEMENT IN THE MENA REGION

Performer: American Association for the Advancement of Science
Presenter: Dr. Kavita M. Berger

In the early-2000s, the U.S. government began engaging scientists and public health officials in the countries of the Middle East and North Africa (MENA) to reduce the risk that individuals and organizations might contribute to the use of pathogens to harm people or the development of biological weapons. Countries that never had offensive biological weapons programs and scientists and public health officials who had never worked with biological weapons (or intended to work with biological agents) were now being included in bioengagement activities. This, along with current social and political unrest across the MENA region, led the AAAS Center for Science, Technology, and Security Policy to embark on a year-long project to identify positive future bioengagement activities that are sustainable, culturally accepted, and locally needed. Based on expert consultation, we identified specific opportunities for bioengagement, approaches to promote sustainable cooperation, and process improvements to enhance cooperation between U.S. and MENA scientists.

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WHY DID IRAQ NOT USE CHEMICAL WEAPONS DURING THE 1991 GULF WAR? AND LESSONS FOR SYRIA TODAY

Performer: Stanford University
Presenter: Dr. Scott D. Sagan

Why did Iraq not use its chemical weapons arsenal against the U.S. and allied forces during the 1991 Gulf War? Many policy makers and scholars have argued that Saddam Hussein was deterred by ambiguous threats of nuclear retaliation and the explicit threats of regime game made by the George H.W. Bush administration before the war began. Information collected and analysis conducted as part of this project provides a more complicated explanation: Saddam viewed his chemical weapons as providing a trump card, a deterrent to be held in reserve to deter, if possible, US and Israeli nuclear attacks, and to prevent the U.S. from marching all the way to Baghdad. This evidence places more importance, therefore, on U.S. strategic restraint, not just on Iraqi views of U.S. deterrent threats. There are multiple lessons to be learned from this historical episode for U.S. deterrent doctrine, diplomacy, and declaratory policy today.

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NEXT GENERATION WMD NONPROLIFERATION CAPACITY BUILDING

Performer: The Stimson Center
Presenter: Mr. Johan Bergenas

President Obama has identified nuclear terrorism and the spread of WMD among the most urgent and serious threats to security. Today, WMD-materials and associated technologies are spreading more rapidly and more widely than at any other time in history. Despite these realizations, a majority of countries around the world—particularly in the Global South—have yet to inculcate robust preventive nonproliferation standards. The reason is not lack of political will, but competing national priorities and scarce resources. As such, our challenge is to connect WMD capacity building programming with local priorities. Over the last 18 months, focusing primarily on East Africa, the Stimson Center carried out a research project focused on identifying opportunities for a more holistic, whole-of-government, approach to WMD nonproliferation activities. Best practices for security capacity programming bridge the divide between such diverse issues as WMD nonproliferation, economic development, environmental crime as well as trafficking in arms, drugs and human trafficking. The model elevates U.S. WMD nonproliferation priorities in East Africa, while focusing on local security and development priorities.

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RUSSIAN PERSPECTIVES ON STRATEGIC STABILITY

Performer: Naval Postgraduate School
Presenter: Dr. Mikhail Tsypkin

The rapid development of technology, combined with an exceptionally fluid international environment, and, most recently, by the Russian aggression against Ukraine, have made it especially difficult for the US and Russia to find a common vision of strategic stability. For Russia, strategic stability is mutual nuclear deterrence. The main threats to stability, in the Kremlin's view, are American efforts to develop missile defenses and conventional long-range precision guided munitions. Some experts argue that the fundamental insecurity of the so-called false democracies makes their leaders seek imaginary threats abroad in order to mobilize public support for their inherently unstable and illegitimate regimes. The Russian government's concern over strategic stability in the Middle East, South Asia and East Asia is not as intense as the American one. Nevertheless, there are areas of possible common vision, especially in East Asia, where Russian experts see the likelihood of a rapid growth of China's nuclear capabilities.

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CRISIS STABILITY IN SPACE: CHINA AND OTHER CHALLENGES

Performer: USIP
Presenter: Mr. Bruce W. MacDonald

The near-term technical/cost challenge for China and Russia to develop credible counterspace capabilities, coupled with sizable advantages for going first rather than second in a crisis, pose serious questions for U.S. security and crisis stability. At least four characteristics add substantial uncertainty: 1) Rapid space/cyber technological change; 2) Unpredictable cross-domain interdependencies; 3) Major threat uncertainty; and 4) Inexperience operating in strategic space landscape. Further complicating space stability is the short/medium-term absence of assured second strike SLBM-like capability. Several sources exist for potential and actual stability (though unequally available to major space players) including:

- Risk aversion that grows rapidly with escalatory actions
- Collateral effects that accelerate with escalation and time
- Rapid globalized interconnection that favors alliances
- Prospect of greater space resiliency
- Offsetting deterrence capabilities from other domains

Strategically, space stability is likely tolerant of lower-level offense, highly intolerant of major strategic offense, and highly uncertain in between, therefore risky. Crisis signaling is important but easily misinterpreted.

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STRATEGIC [IN]STABILITY IN SOUTH ASIA

Performer: Naval Postgraduate School
Presenter: Feroz Hassan Khan

The strategic picture in South Asia is in flux. India and Pakistan are hostages to peculiar fixations that are intensifying the Indo-Pakistani strategic competition. The original purpose of nuclear weapons was to dissuade and deter conflict and perhaps force an Indo-Pakistani détente, but in reality, operational nuclear deterrents have failed to stabilize the subcontinent. Fifteen years since 1998, mutual mistrust in both capitals has continued to prevail; Kashmir remains an unresolved flashpoint for conflict; and religious extremism is also on the rise. Additionally fissile material production is expanding rapidly including a suite of new nuclear-capable delivery system—battlefield nuclear weapons, sea-based variants and ballistic missile defense. This nascent arms race can only be expected to increase in the coming years.

Given these manifold complications, strategic stability in South Asia will remain on precarious footing, and the subcontinent's proximity to the Middle East and Asia-Pacific means that tension, crisis, and conflict between India and Pakistan will invariably influence strategic dynamics and balance-of-power calculations in these broader regions.

Feroz Khan will summarize findings from his recent research, Track- II Table top exercises, field trips, and visit to the region and suggest areas that need further study.

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SCIENCE NEEDS FOR MICROBIAL FORENSICS: DEVELOPING INITIAL INTERNATIONAL RESEARCH PRIORITIES

Performer: National Academy of Sciences
Presenter: Dr. Fran Sharples

Any investigation of an alleged hostile use of biological agents is likely to involve scientific analysis to support efforts for attribution. The U.S. and some other governments and international organizations are actively working to identify and support the research needed to build these "microbial forensics" capabilities. Building awareness of and capacity in microbial forensics can assist in our understanding of what may have occurred during a biothreat event and facilitate international collaborations that engage the broader scientific and policymaking communities. One goal is to create a shared technical understanding of the possibilities—and limitations—of the scientific bases for microbial forensic analyses. The demand for "evidence" and "proof" in the context of law enforcement or international policy impose specialized needs. Another goal is to identify the range of scientific needs to continue the field's development. With these needs and realities in mind, a group of national and international scientific organizations undertook a collaboration whose centerpiece was a workshop held in the fall of 2013 in Zagreb, Croatia to encourage fostering collaboration within the international scientific community to support technical understanding and enhanced research on microbial forensics, and developing the beginnings of an international roadmap for how to do the necessary science, including priorities among potential topics.

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VERIFICATION BY MEANS OF SOCIAL MEDIA

Performer: The Monterey Institute of International Studies
Presenter: Mr. Bryan Lee

The tremendous growth of online social networks and rapid improvements in smartphone capabilities has led to a revived interest in the concept of societal verification or "inspection by the people." The idea has a long history in the arms control and nonproliferation community, and recent real-world experiments such as the 2009 Defense Advanced Research Projects Agency (DARPA) Network Challenge and the 2012 State Department "Tag Challenge" have demonstrated the feasibility of using online technology to perform certain monitoring-like tasks. This presentation provides an overview of the capability of online technologies to support societal verification and offers a new typology that serves to broaden the field of possible application. It will also offer a short case study of how online open source technologies are currently being used in a nonproliferation context, and offer recommendations on best practices for future implementation.

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GLOBAL MOVEMENT & TRACKING OF CHEMICAL MANUFACTURING EQUIPMENT

Performer: National Academy of Sciences
Presenter: Dr. Kathryn Hughes

On May 12-13, 2014, the Board on Chemical Sciences and Technology (BCST) of the National Research Council held two-day workshop on the *Global Movement & Tracking of Chemical Manufacturing Equipment*, sponsored by the Naval Postgraduate School's Project on Advanced Systems and Concepts for Countering WMD (PASCC). An overview of the workshop will be presented, including some highlights from the discussion. Some reflections on lessons learned while planning the event and suggestions for future directions that emerged during the meeting will also be provided.

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General Biorisk Profiles in IHR-Compliant National Laboratory Systems

Performer: The George Washington University
Presenter: Dr. Julie E. Fischer

The revised International Health Regulations [IHR (2005)] obligate the now-196 States Parties to develop core capacities required to detect, assess, report, and respond to public health emergencies of international concern, regardless of origin. The World Health Organization's IHR Core Capacity Monitoring Framework emphasizes access to diagnostic services for priority diseases, as well as risk-based biological safety and security capacities. One avenue to understanding the general risks incurred when countries strengthen their diagnostic laboratory networks under IHR (2005) is to consider capacities developed at each level of a tiered, integrated laboratory network to identify priority diseases reliably and promptly. We have developed a model to approximate the degree of risk incurred by manipulation of priority pathogens for appropriate screening, diagnostic, or confirmatory tests for a notional laboratory system, and developed a typology that describes the general biorisk profile of laboratories at each level of this tiered national system.

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PURSUING NANOTECHNOLOGY IN A GLOBALIZED WORLD: CROSS-NATIONAL DIMENSIONS AND STRATEGIC ASSESSMENTS OF AN EMERGING TECHNOLOGY

Performer: Naval Postgraduate School and Northeastern University
Presenter: Drs. Anne Clunan and Kirsten Rodine-Hardy

Nanotechnology is increasingly seen as the next great race in terms of national competitiveness and technological dominance. There is much hyping of both the benefits and threats posed by this emerging and inherently dual-use science, with some claiming that it is revolutionary and disruptive. Our work provides a tentative assessment of nanotech's potential for technological surprise through a two-pronged analysis: first, of the nature of nanotechnology and the literatures on innovation and revolutions in military affairs; and second, of the nanotech development and regulatory strategies currently underway globally, with particular focus on Europe and China.

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PARTNERS IN PREVENTION: LEVERAGING THE FORCE OF THE MARKET FOR NONPROLIFERATION

Performer: The Stimson Center
Presenter: Dr. Brian Finlay

Success or failure in meeting 21st century proliferation challenges will hinge upon our ability to think innovatively about solutions to the threat. While government efforts to manage WMD proliferation has been robust, relatively little thought given to the role of private industry. Beyond overly simplified promotion of "public/private partnerships" that more often resemble contractual relationships, neither government nor civil society has successfully engaged industry on their terms. Although no well-meaning company would willingly involve itself in criminal activities, it is true that industry is motivated primarily by profit, not by security. Partners in Prevention seeks to exploit opportunities for leveraging industry's role in proliferation prevention by utilizing the motivation of the market itself. By establishing win-win partnerships between the public and private sectors in the national security domain that rightly encourage profit while yielding a security dividend, industry can become the not-so-secret weapon in our global struggle against WMD proliferation.