

Science, Technology and Security Policy

A key role of the AAAS Center for Science, Technology and Security Policy (CSTSP) is bringing science and technology expertise to the analysis of global security issues. The center's activities include public reports and policy recommendations as well as active programs affecting a variety of communities, both domestic and international. Recent activities have been in the areas of international bioengagement, science and security dialogues with domestic and international institutions, and studies and public events on nuclear nonproliferation and space security issues.

Participants at the AAAS workshop in Dubai (at right) discussed ways to promote broader cooperation between scientists working in the Middle East, North Africa, Afghanistan and Pakistan.

BIOSECURITY IN THE BMENA REGION

In 2012, the Center for Science, Technology and Security Policy (CSTSP) organized the last of a series of four workshops focused on safety and security in bioscience research in countries from the broader Middle East and North Africa (BMENA). Thirteen countries from the region participated in the 2012 workshop, which took place in Dubai, in the United Arab Emirates. The series was funded by the U.S. Department of State, with part of the grant money going toward bilateral cooperation efforts between the United States and participating BMENA countries.

The State Department grants catalyzed new scientific collaborations between scientists from BMENA countries and the United States on such projects as nanobiotechnology, wildlife conservation and infectious disease surveillance and genomic technology. Several of these collaborative projects have secured further support to expand. The meetings, which were intended to encourage broader cooperation between American scientists and researchers working in the BMENA region, brought out ongoing challenges being experienced by young



researchers there, including a lack of mentorship, scant opportunities to work with regional colleagues, and in some cases, funding and equipment shortages.

AAAS, FBI COLLABORATE ON BIOSECURITY

AAAS co-organized meetings in 2012 with the Federal Bureau of Investigation (FBI), the Association of American Universities, and the Association of Public and Land-Grant Universities to bring together researchers, policymakers and security experts to address the challenges faced in supporting biological research while minimizing security risks.

The first meeting established a dialogue between universities and the FBI, providing opportunities for academic scientists and research administrators to work with the security community to develop recommendations to handle such risks as misuse of biological research, theft of biological agents and accidental exposure.

The second meeting, which used the H5N1 avian influenza research published by *Science* as a case study (see page 24), allowed the scientific and security communities to explore the best ways to oversee and communicate “dual-use” research, which has beneficial scientific value but may pose a public threat. The information shared at the meeting is being used to inform national-level policy discussions and proposed regulations regarding institutional oversight of dual-use life sciences research.

SUPPORTING NUCLEAR ARMS CONTROL

Fears of terrorism, nuclear programs in Iran and North Korea, and lingering tensions between the United States and Russia continue to make arms control a global priority, said experts at a workshop on the topic that was co-organized by AAAS.

Scientists and engineers play a principal role in lessening the threat of nuclear arms and helping to detect nuclear weapons tests by developing and employing highly sensitive advanced technologies. In addition, as during the height of the Cold War during the 1980s,



international collaboration among scientists can build trust that supports arms control efforts.

“In terms of U.S. diplomacy, some of the greatest assets we have are not only in our government agencies, but in our foundations, science associations and other areas,” E. William Colglazier, science and technology advisor to Secretary of State Hillary Clinton, told the meeting at the Georgia Institute of Technology. “We’re going to have to use all of our assets if we’re going to create a more peaceful world.”

PUBLIC, PRESS AND POLICY EVENTS

A number of events organized by CSTSP helped to examine and present scientific and technological expertise to policymakers and the public on topics related to nuclear energy and nuclear nonproliferation.

One expert panel took place before the Senate Energy and Natural Resources Committee and focused on the technical, environmental, safety, security, economic and proliferation issues surrounding the use of small, modular nuclear reactors. Another panel discussion for U.S. House of Representatives staff tackled the current state of Laser Isotope Separation technology, particularly exploring the proliferation risks associated with a technology that makes it easier to enrich uranium while avoiding safeguards.

In September 2012, CSTSP organized a Capitol Hill briefing at which nuclear test monitoring

Norman Neureiter (right), director of the AAAS Center for Science, Technology and Security Policy and senior advisor to the association’s Center for Science Diplomacy, received the prestigious Austrian Cross of Honour for Science and Art 1st Class, bestowed by Karlheinz Töchterle, Austria’s federal minister of science. The award recognized Neureiter’s contributions to the success of an international organization that addresses global challenges—the International Institute for Applied Systems Analysis (IIASA).



Above: Participants at a series of AAAS-co-sponsored workshops in Jordan, Kuwait, Tunisia and Dubai discussed the region's scientific capacity, which will soon include the Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME). Now under construction in Jordan, the particle accelerator promises to foster multi-disciplinary research and build relationships across borders.

Below: A range of science and security resources, including this 2012 report, can be found online at www.aaas.org/cstsp/publications/.

experts said that the last decade has seen big improvements in the ability to detect clandestine nuclear explosions. "Technical capabilities have improved significantly in the past decade," said physicist Richard Garwin, an IBM Fellow Emeritus and member of a National Research Council study panel that produced a March 2012 report reviewing technical issues related to the Comprehensive Nuclear-Test-Ban Treaty (CTBT). That report concluded there is now 90 percent confidence that the current International Monitoring System could detect

an underground nuclear explosion well below 1 kiloton in most regions. The nuclear weapons that were used against Japan in World War II had yields of between 10 and 20 kilotons.

The briefing and a workshop that followed helped to inform the ongoing discussion in the Senate and the Administration of President Barack Obama surrounding nuclear test monitoring and verification and the CTBT.

AAAS also co-hosted a workshop on nuclear weapon safety, security and "use control" issues in 2012.

