

Science Policy and Security

AAAS activities are helping to promote the responsible use of science and technology to improve human well-being. From testimony on technologies for detecting “dirty bomb” components, to a highly regarded fellowship program and gold-standard R&D budget analysis, AAAS seeks to provide objective, authoritative scientific and technological insights to policy-makers. In 2005, AAAS science policy efforts focused on improving innovation, promoting international collaboration, enhancing national security, and more.

Innovation and Competitiveness in the United States

AAAS urged the President and Congress to take strong steps to sustain American innovation by investing in high-risk, breakthrough research and by improving science education at all levels. “We do not want to put our country and our knowledge-based, technology-driven economy in the position of ‘catch-up,’” wrote Gilbert S. Omenn of the University of Michigan, Ann Arbor, then AAAS President, in a 9 December letter to U.S. President George W. Bush. Meanwhile, AAAS Chairman of the Board Shirley Ann Jackson contributed to the National Academies’ report, *Rising Above the Gathering Storm*, and worked with the Council on Competitiveness Innovation Initiative.

Those efforts culminated with the National Summit on Competitiveness, hosted by the U.S. Department of Commerce in conjunction with other Cabinet-level departments and business organizations. As president of Rensselaer Polytechnic Institute, Jackson also wrote to President Bush, warning that “our science and technology position is a looming national crisis because it robs us of our capacity for innovation.” President Bush subsequently released his American Competitiveness Initiative, which proposes broad investment in research and development, education, entrepreneurship, and innovation.

Scientific Insights to Security

Even a small amount of radioactive material, smuggled from one country to another, could be used to assemble highly dangerous “dirty bombs.” Nuclear proliferation and the complexities of nuclear waste disposal continue to threaten security and public safety. And, policy-makers are challenged to invest wisely in security-related technologies, from lasers and satellites to flu-vaccine manufacturing strategies. The AAAS Center for Science, Technology, and Security Policy, supported by the John D. and Catherine T. MacArthur Foundation, provides policy-makers with objective, nonpartisan technical information, by arranging briefings with specialists on specific issues and providing quick-turnaround responses to specific questions from Congressional and federal agency staff members.

The Center also advances public understanding of key security issues through public events at AAAS. In November, for example, a showing of the HBO film “Dirty War” was followed by an expert panel discussion that provided a balanced explanation of the threat of smuggled dirty bomb components. Earlier, public events featured experts such as nuclear proliferation expert Siegfried Hecker, former director of Los Alamos National Laboratory, the last scientist to visit North Korea’s nuclear program, and Rajagopala Chidambaram, principal scientific adviser to the government of India. Meanwhile, the Center continues to conduct off-the-record briefings with leading defense-beat journalists. Log onto www.aaas.org/programs/centers/cstsp.



Speaking Up for Science

Fast-moving science policy issues invariably demand a rapid response from the world's largest scientific organization. AAAS policy efforts in 2005 included a letter distributed to all U.S. senators, urging support for a proposal to let researchers derive new stem cell lines from embryos created by *in vitro* fertilization. "We believe strongly that embryonic stem cell research should proceed in an ethical manner that engenders public confidence," the AAAS CEO wrote. AAAS also wrote a letter of thanks to Sen. Bill Frist (R-Tenn.) following the policy-maker's public expression of support for stem-cell research. Separately, the Association urged the United Nations General Assembly to modify a resolution that called on nations to ban all forms of cloning, even the extraction of stem cells for research. On 8 March, the U.N. resolution passed.

On other fronts, AAAS expressed strong concerns about a Congressional inquiry that sought to intimidate climate-change scientists; proposed improvements to the U.S. visa system; decried a boycott of research with Israeli universities; and reaffirmed the importance of women in science and engineering.

Understanding the R&D Budget

The authoritative AAAS R&D Budget and Policy Program, headed by Kei Koizumi, benefits from an increasingly strong reputation as the go-to source for nonpartisan analysis of federal research spending. Koizumi's annual evaluation of the U.S. Administration's proposed R&D budget, released at the prestigious AAAS Forum on Science and Technology, typically receives widespread attention on Capitol Hill, and from reporters challenged to make sense of complex budget proposals. "Federal spending on scientific research has been fairly flat for several years, a trend experts say will lead to fewer medical and scientific advances and ultimately to severe impacts on the economy," the *Philadelphia Inquirer* reported. "And since 2001, a greater piece of the pie has gone toward science related to defense and counterterrorism, according to an analysis by the nonprofit American Association for the Advancement of Science." See www.aaas.org/spp/rd.



Science in the Service of Human Rights

Science can provide human rights workers and policy-makers with crucial data. Satellite images of impending crop failures, for example, or air-quality measures that illustrate environmental risks to vulnerable populations increasingly play a role in efforts to improve human rights worldwide. At a workshop organized by the AAAS Science and Human Rights program, researchers such as Molly Brown of the NASA Goddard Space Flight Center described remote-sensing methods for predicting areas where crop failures may trigger food scarcity. Other experts described disparities in access to medical care by race and the relationship between environmental conditions and human health. Go to <http://shr.aaas.org>.

"U.S. visa policies need to be calibrated to restore the image and the reality of the United States as a welcoming nation."

—Albert H. Teich, director, science and policy at AAAS, in the *Financial Times*, 18 May 2005

"You know, we are in what Shirley Ann Jackson, the president of Rensselaer Polytechnic Institute, calls a quiet crisis. And, as my friend, Paul Romer, the great economist from Stanford likes to say, 'Tom, crisis is a terrible thing to waste.'"

—New York Times *Times* columnist Thomas L. Friedman, talking to CNBC's Tim Russert, 8 October 2005