

Science, Policy and Society

The AAAS Center of Science, Policy and Society Programs (CSPSP) engages with the world of science policy through a successful program for science and technology fellows in government and an annual high-level science policy forum known for its astute analysis and information. The center also provides scientific expertise to support human rights and to uphold the quality of scientific endeavors. CSPSP further addresses the implications of science and engineering in public policy, the law and religion.

S&T POLICY FELLOWSHIPS APPROACH THE BIG 4-0

As it neared its 40th anniversary, the AAAS Science & Technology Policy Fellowships program continued its dual mission of bringing scientific expertise to the world of government policy and political savvy to the science professions. Begun in 1973 with just seven science fellows, the program in 2012 welcomed 279 fellows (shown below), who will serve one or two years in congressional and executive branch positions.

As the newest fellows began their program,

Senator Jeff Bingaman (D-New Mexico) called on them to help protect America's contribution to science and engineering research in an era in which he said bipartisan support for it is dwindling, and as some members of Congress believe that any new investment in research needs to be paid for by cutting research elsewhere in the budget.

"You'll be well-positioned to facilitate bipartisan discussions that we need to be having on a daily basis about how we can continue to ad-





Several units of AAAS, in collaboration with The Dana Foundation, organized a series of events for Congressional, public and legal audiences on the implications of advances in neuroscience. The series encompassed poverty's impacts on the brain, for instance, and what science has told us so far about Alzheimer's disease, early-onset dementia, brain injuries and mental illness. At one briefing, Martha Farah of the University of Pennsylvania (right, bottom) said children growing up in impoverished conditions with limited cognitive stimulation and high levels of stress may be "more likely to grow up with compromised physical and mental health and lowered academic achievement." At another event, speakers including Ann McKee of the Boston University School of Medicine (right, middle) explained why high-school athletes risk chronic traumatic encephalopathy, a neurodegeneration that can result from multiple mild concussions. U.S. Representative Chaka Fattah (D-Pennsylvania), a champion for neuroscience (right, top), also took part in the briefing.

vance science and engineering innovation in the national interest," Bingaman told the fellows.

Fellows work on such pressing issues as federal policy for adaptation to climate change. More than 50 percent of them continue in government after their fellowships end, and over the years, many have ended up in high-impact positions in the White House, Congress, the State Department, federal agencies, research universities and non-governmental organizations.

"One of the exciting things about the program," said Fellowships Director Cynthia Robinson, "is that [the fellows] have taken the experience they've had in Washington, D.C. ... to engage in the work that they've done throughout the rest of their careers."

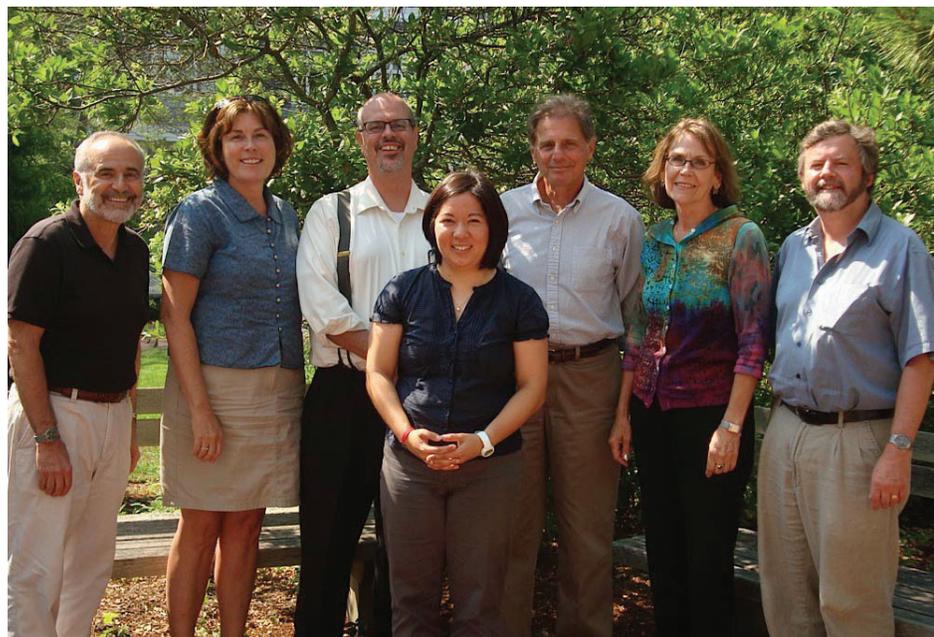
RESEARCH COMPETITIVENESS PROGRAM

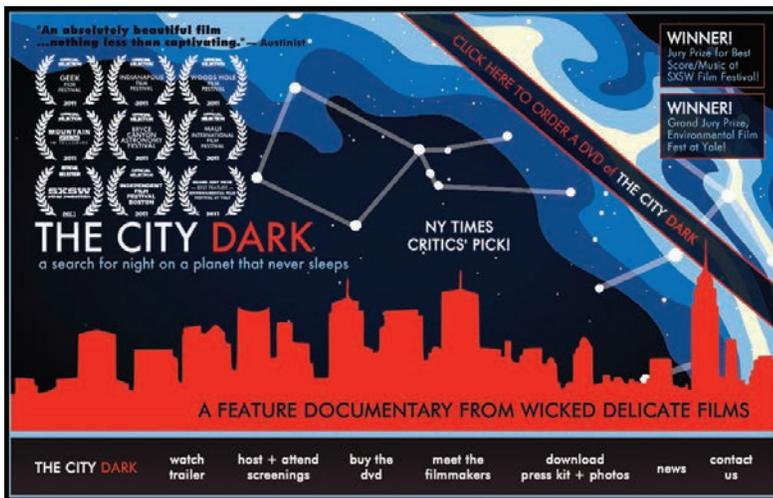
The AAAS Research Competitiveness Program (RCP) provides expertise to organizations engaged in science and technology research. In 2012, RCP undertook 34 projects throughout the United States and the Kingdom of Saudi Arabia, assisting universities, state-based research collaborations, foundations and state and federal agencies with such processes as

peer review of research grant proposals and evaluation of ongoing programs. Identifying, recruiting and managing the experts needed to assist clients in their science and technology projects remains a main focus for AAAS.

Among RCP's many 2012 projects was an independent review of Phase I of the Gordon and Betty Moore Foundation (GBMF) Marine Microbiology Initiative, a ten-year, \$145 million effort to answer fundamental questions about the diversity of marine microorganisms

Members of the AAAS External Advisory Committee and AAAS staff for the Marine Microbiology Initiative of the Gordon and Betty Moore Foundation include (left to right): Robert Gagosian, Claire Fraser-Liggett, Edward Derrick, Rieko Yajima, Gary Borisy, Margaret Leinen and Paul Snelgrove.





Above: The pervasive use of artificial lighting has been linked to health problems, while also hindering astronomers as they seek to study the stars, speakers said at a 2012 screening of the film, *The City Dark: A Search for Night on a Planet that Never Sleeps*. The event was co-sponsored by the AAAS Dialogue on Science, Ethics and Religion and the American Astronomical Society.

Below: Physicist S. James Gates, Jr. of the University of Maryland-College Park, addressed the 2012 AAAS Forum on Science and Technology Policy.

and their role in ocean health. The review involved approximately 20 external consultants, multiple stakeholder meetings, data collection and quantitative and qualitative methodologies. Findings and recommendations were delivered to the GBMF Board in October 2012.

FORUM ON S&T POLICY

At the 2012 AAAS Forum on Science and Technology Policy, an annual event designed to offer the latest in-depth analysis and information on science policy, science and government leaders presented topics ranging from new insights on voter psychology, to training science and technology students to be innovators, to strategies for keeping the U.S. scientific enterprise vital in a time of critically threatened budgets.

Speaker John P. Holdren, the White House science and technology advisor and director of the Office of Science and Technology Policy,

reiterated President Barack Obama's commitment to scientific innovation as a driver of economic productivity, asserting that especially in a time of economic struggle, it is crucial to invest in areas such as advanced manufacturing, "big data" computing and science education. In another presentation, U.S. Representative Lamar Smith (R-Texas) promised Congressional support for R&D but warned that the scientific community must "be prepared to negotiate and compromise."

More than 400 government and business leaders, researchers, educators and journalists attended the 2012 Forum.

SCIENCE IN SUPPORT OF HUMAN RIGHTS

In 2012, high-resolution satellite images, analyzed by AAAS, offered new insights into the Syrian conflict, revealing apparent evidence of heavily armored vehicles and damage to buildings in civilian neighborhoods. The images "largely corroborate on-the-ground reports of heavy-artillery assaults by the Syrian army moving through neighborhoods," said Susan Wolfenbarger, director of the Geospatial and Human Rights Project at AAAS, a program funded by the John D. and Catherine T. MacArthur Foundation, the Oak Foundation and the Open Society Institute.

Satellite images taken of Western Ethiopia confirmed that farmers there had been removed from their land and relocated, possibly to make way for large-scale industrial farms. "Using satellite imagery, we came up with the same result as people on the ground," said Wolfenbarger, referring to a report prepared by Human Rights Watch.

Also in 2012, the AAAS Science and Human Rights Coalition held a meeting focused on climate and environmental issues, highlighting that preventing, mitigating and adapting to the challenges of climate change will require important input from indigenous peoples. Rebecca Tsosie, director of the Indian Legal Program at Arizona State University, spoke of the "scientific and ethical component to indigenous knowledge—it tells native people what is the right thing to do. It tells us what effective management is and what the consequences are of destructive or harmful management. That aspect of sacred knowledge cannot be left out of the discussion."

