

Welcome from the AAAS Chair, Alice S. Huang, and the CEO, Alan I. Leshner



Advances in science and technology have the power to bridge cultural, ideological and language barriers worldwide. Even amid politically tense circumstances, science serves as a universal way to communicate across borders. Shared scientific goals represent an effective leverage for enhancing international relationships as researchers cooperatively confront questions about national security, science education, human health, environmental sustainability, the origins and nature of the universe and much more.

Successful science diplomacy initiatives can be implemented at many levels—between individuals, institutions and governments. AAAS initiatives in 2011 helped to promote science and technology cooperation broadly across various geographic regions, particularly Asia-Pacific Rim countries such as China, India and Mexico. In Bangalore, for instance, AAAS teamed up with an elite group of Indian science leaders to explore the need for universally compatible scientific standards and practices. Cohesive, consistent policies and ethical guidelines have become ever more important as multi-national, multi-disciplinary research teams scramble to mitigate disasters caused by nature and people. Association leadership emphasized that message at the World Science Forum in Hungary and elsewhere over the past year. Turn to pages 12-13 for more information on these and other high-impact contributions by the AAAS International Office.

Improving science education—and providing support as well as unparalleled resources to teachers, students and science career seekers—has long been the focus of multiple AAAS activities. In 2011, those efforts included, as one example, a major conference for more than 500 college and university faculty, administrators and others who are working to advance undergraduate education in science, technology, engineering and mathematics (STEM). Participants described an array of innovative and increasingly multi-disciplinary projects to help promote student learning while providing them with hands-on discovery experiences. The event was organized by AAAS Education and Human Resources staff as part of the Association's ongoing work with the National Science Foundation (NSF) program that promotes Course, Curriculum and Laboratory Improvement.

Other education and career-related events focused on expanding the innovation pipeline by developing strategies to recruit and retain a more diverse community of scientists and engineers. Transformative thinking and new ideas often spring from new participants to the science and engineering enterprise. This is why AAAS coordinates science and technology internships, in concert with NASA, the National Oceanic and Atmospheric Administration, and companies like IBM, Merck and Lockheed Martin, for qualified, motivated students with disabilities. Similarly, AAAS in 2011 hosted 600 attendees of the NSF Emerging Researchers National

Conference in STEM—part of a broad effort to support scientists from historically under-represented groups, a goal of the America COMPETES Act. AAAS further issued a new NSF-sponsored guide for graduate program leaders interested in measuring the effectiveness of efforts to promote diversity.

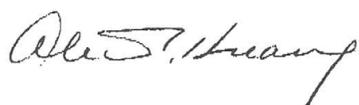
Of course, student performance in science and technology-related fields depends to a large extent on curriculum and the capability of their teachers. A new Web site developed by Project 2061, the renowned AAAS science-literacy initiative, helps educators more accurately assess how well students understand science concepts presented to them in classrooms. The online resource offers unusually detailed information on how thousands of U.S. middle- and early high-school students answered 600 multiple-choice questions on topics ranging from cell biology to plate tectonics. These and other 2011 highlights of AAAS science education activities are described on pages 14-15.

The scourge of HIV/AIDS, regional shortages of food and water and the looming global climate change crisis are examples of global challenges requiring science-based solutions. U.S. federal research and development (R&D) funding remains essential to both American competitiveness and efforts to combat problems that affect all of us, worldwide. Objective, authoritative analyses completed by the AAAS R&D Budget and Policy Program, combined with the communication efforts of the Association's Office of Government Relations (pages 10-11), are helping to inform U.S. science policy on issues at the intersection of science and

society. The AAAS Research Competitiveness Program, meanwhile, continues to support the efforts of science innovators throughout the United States, and in Saudi Arabia and Europe. See pages 7-9 for more information on the work of the AAAS Center of Science, Policy and Society Programs, and pages 16-17 for details about the Center for Science, Technology and Security Policy.

AAAS also worked to engage its membership and the public in key science-society issues. The successful launch of MemberCentral, the Association's community portal for members, now offers an array of multi-media materials on topics ranging from climate change to genetic sequencing, and from the obstacles facing women in science to the meaning of "transformative research." Public engagement activities in 2011 encompassed, for example, Family Science Days at the AAAS Annual Meeting and participation in the USA Science & Engineering Festival.

The *Science* family of journals continues to publish ground-breaking original research and award-winning science news, too (see pages 18-19). Finally, the AAAS Board launched a year-long examination of all AAAS functions, including publications, with the purpose of positioning the association for continued effectiveness and service to the science community in the coming decades. With your support, these and many other AAAS activities are helping to bring a thoughtful diversity of ideas to bear on the global quest for science-based solutions and innovation.



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