

Welcome

from the AAAS Chair, Nina V. Fedoroff,
and the CEO, Alan I. Leshner



Scientific evidence tells us unambiguously that global climate change is real and happening now, and it is related to human activities, yet there is still a disconnect between the facts and some people's beliefs. Warmer temperatures have already affected corn,

wheat, rice and soybean yields, which decline by roughly 10 percent in response to each additional degree of heat. And yet the world's food supply needs to double as the human population pushes toward 9 billion by mid-century. Crops engineered to resist drought and pests suggest a way to feed hungry people while protecting natural resources. Sadly, unfounded public fears about modified foods have persisted. Meanwhile, farmland all over the world has succumbed to overuse, drought and wildfires.

Clearly, pursuing new scientific knowledge for its own sake is not enough. Too many people remain unconvinced of the reality of climate change and unconcerned about other urgent problems such as water scarcity and disappearing species. Scientists, engineers and educators must effectively communicate science in order to accelerate the pace of positive change worldwide.

Strategies for influencing public perceptions about science-based challenges were the focus of a lively, interactive event that took place during the 2012 AAAS Annual Meeting in Vancouver, Canada. A panel of experts, moderated by award-winning journalist Frank Sesno, director of the School of Media and Public Affairs at George Washington University, offered insights for communicating about climate change, the world's increasing human population, evolution and more. The event, featuring audience surveys and online feedback, also included Hans Rosling's unique demonstration of global population trends. (For a video

replay, log onto <http://www.aaas.org/go/rosling>.) Turn to pages 8-10 for details on the association's many communication and public engagement efforts.

International research collaboration is also a key to leveraging science in the service of society. Science diplomacy, in particular, can speed advances, even amid tense governmental relations, as shared research goals help to build a bridge between nations. AAAS in 2012 demonstrated the promise of this basic principle by dispatching delegations to Iran, North Korea, Burma and Cuba, and by launching a new online publication, *Science & Diplomacy*. In Iran, for example, which is known for advances in medical and stem cell research, former AAAS President and Nobel laureate Peter Agre joined AAAS Senior Advisor Norman P. Neureiter for meetings with President Mahmoud Ahmadinejad and others. "It is a strategy of engagement," Neureiter explained to popular WAMU-FM radio show host Kojo Nnamdi after the Iran trip. "You find common issues in science that you can work on."

Scientific discovery is increasingly an international, multidisciplinary enterprise. At the same time, finding innovative ways to sustain more and more people in the 21st century will require a diversity of ideas from many regions. Read about AAAS international work on pages 11-13.

The AAAS Science and Technology Policy Fellowships, dating to 1973, were established to bring scientific expertise to bear on the U.S. policy-making process. Today, more than 2,500 alumni of the program are making meaningful contributions to global challenges, too, including efforts to combat hunger, disease and ecological threats. AAAS S&T Policy Fellows have provided crucial data in support of the Endangered Species Act, for example. They have also participated in a federal task force on climate change adaptation, worked on a recovery and reconstruction project in Haiti, and

helped to establish a digital research library for Iraqi scientists. Alumni of the program have risen to high-impact positions in Congress, the White House, the State Department, USAID, federal agencies, research universities and non-governmental organizations.

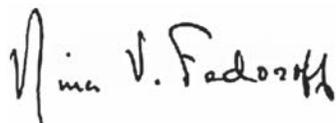
Pages 14-15 and 18-19 of this report offer more information on the S&T Policy Fellowships as well as the association's many other science policy-related programs. Those ongoing activities include a highly effective Research Competitiveness Program that promotes economic progress by helping universities, state agencies and other institutions translate ideas into commercial services and products. Communicating the connection between research investments, innovation and job growth also remains a primary goal for AAAS science policy and government relations staff. In 2012, AAAS provided authoritative, unbiased analyses of federal R&D funding trends, and organized events to inform public discourse on topics such as water conservation, climate change and agricultural advances. The four geographic divisions of AAAS convened regional meetings on topics including sustainable design and human health issues in the Arctic (see pages 31-32).

Project 2061, the association's renowned science-education reform initiative, and experts like Shirley Malcom of AAAS Education

and Human Resources are working to improve U.S. science education. The association's efforts to promote science literacy—encompassing new assessment tools, lesson plans and scholarships for teachers, plus major networking events and presentation opportunities for early-career researchers—are described on pages 27-30. An update on *Science Careers*, our comprehensive online resource for science job seekers and employers, has also been included there.

The *Science* family of journals, published by AAAS, continued in 2012 to convey original, peer-reviewed research with potential to improve human welfare. (See pages 23-26.) Pioneering studies of H5N1 avian influenza set the stage for the development of antivirals and vaccines, which will be essential in the event of a pandemic. Other research and news articles published by *Science*, *Science Translational Medicine* and *Science Signaling* advanced our understanding of drug-resistant malaria in Southeast Asia, HIV-AIDS in America and key genetic mechanisms that could lead to more robust, productive rice crops.

We gratefully acknowledge the efforts of many researchers who are both achieving and communicating life-changing discoveries. With your help, AAAS will continue to play an important role in building a global knowledge society for the 21st century.



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