Science Careers and Education

Promoting understanding of science worldwide, recruiting science and math teachers, providing resources to young people starting out in science careers, strengthening and diversifying the workforce—AAAS works through its multi-targeted career and education programs to improve the quality of science education and the accessibility of resources available to those in science careers.

Promoting Climate Literacy and More
Thanks to grants from NASA and NOAA, the AAAS science-literacy initiative Project 2061 is developing classroom materials to engage middle-school students in concepts related to climate and climate change. The project aims to improve students’ understanding of climate science, yet it has another goal: to capture middle-schoolers’ curiosity at an age when science performance often drops. The grants allow Project 2061 staff, along with experts in climate science and teaching, to use real-world NASA and NOAA data to engage students in climate science.

Participating in the worldwide effort to promote science literacy, AAAS in 2009 welcomed educators from Pakistan and Japan with an interest in using Project 2061’s tools and resources to improve science teaching and learning in their own countries. As part of a five-year effort, Project 2061 also hosted a delegation of educators from Shanghai, and compared notes with them on challenges encountered in designing, implementing, and evaluating science education methods. The Chinese translation of Project 2061’s Atlas of Science Literacy, Volume 1, won a national prize in China, and Project 2061 Deputy Director George DeBoer was honored with an award in Shanghai for his contributions to international exchange.

Social Media for Career Development
Taking advantage of new Web technologies and internal synergies, Science Careers—in conjunction with AAAS Education and Human Resources, the Office of Publishing and Membership Services, and the Center for Careers—have launched two social networks. Both draw editorial content from Science Careers, and invite individuals and organizations to contribute ideas and resources for exploring the pathways to successful science careers.

CTSciNet is an online community for people interested in or pursuing careers in clinical and translational research. Built in partnership with 13 other organizations, CTSciNet is funded by the Burroughs Wellcome Fund. Meanwhile, MySciNet brings together scientists and students from diverse communities to network—and build the personal and professional connections needed to succeed in the sciences. MySciNet received funding from the William T. Golden Fund for Program Innovation at AAAS and 10 other sources.

Science Careers has also drawn on its network of career experts and scientists to produce two Webinars linked to print and digital versions of resource booklets. Career Trends: The Informed Job Search and Career Trends: Careers Away from the Bench. In addition, a new booklet called Career Basics: Advice and Resources for Scientists is intended for early-career scientists, and one titled Young Women in Science: Forging New Pathways speaks to the career interests of young women and girls.

Transforming Undergrad Biology
Most graduates of introductory college-level biology lack an understanding of scientific inquiry, including how to evaluate explanations of the natural world. Realizing this and its alarming ramifications, 500 faculty, college administrators, and policy-makers converged in July at an event sponsored by AAAS and the National Science Foundation, Minority Opportunities in Research of the National Institutes of Health, and the Howard Hughes Medical Institute. The main topic was how to prepare students, not just biology majors, to work...
and participate in a world in which understanding science is critical. The conference followed a series of conversations, with more than 200 educators from around the country as well as undergraduates, designed to elicit ideas on how to improve undergraduate biology education. The gathering resulted in a report, *Vision and Change: A Call to Action*, ongoing networking and dissemination of materials related to the topic, and more.

**Building Capacity, Supporting Diversity**
Underrepresented minorities—including African Americans, Native Americans, Hispanics, and women and people with disabilities—represent two-thirds of the U.S. workforce but hold only a quarter of the science and technology jobs. Through the Center for Advancing Science & Engineering Capacity, AAAS offers expert advice on how to help scientists and engineers succeed. The Center organized and hosted four workshops—on mentoring of female scientists, promoting participation in computing, and two on law and diversity on university campuses. In the law and diversity workshops, the Center produced materials on navigating the legal maze around promoting diversity in undergraduate and graduate faculty and student bodies. With counsels and provosts from 35 Association of American Universities member institutions, the workshops provoked meaningful dialogue on how to support diversity. These forums give universities tools for “refining the way they do business,” Center Director Daryl Chubin told attendees.

**Science and Mathematics Teachers**
Three AAAS initiatives are aimed at ensuring a pool of highly effective teachers.

DC ACTS and DC FAME, professional education programs conducted in partnership with George Washington University and funded by the D.C. Office of the State Superintendent of Education, provide veteran and new teachers with the content, pedagogical knowledge, and leadership skills to become agents of change in their schools.

In another effort, AAAS collaborates with the National Science Foundation in support of the Robert Noyce Teacher Scholarship Program. Cultivating science and mathematics teachers is the mission of the scholarships, which offer classroom experience and support as well as stipends to undergraduate science, mathematics, and engineering majors; post-baccalaureate students; and professionals already working in science and engineering. For each year of support, recipients teach at least two years in a high-need school district. The program conference, supported by the NSF, brought together 400 faculty, students, and professionals in science, technology, engineering, and mathematics, who discussed the best strategies for supporting new teachers, including observation and feedback, mentoring, and co-teaching.

**Careers for Engineers with Disabilities**
At a first-of-its-kind meeting of engineers with disabilities, participants from academic institutions, federal agencies, and professional societies discussed how they have solved problems that faced them in school and the workplace. Funded by the National Science Foundation and organized by the AAAS Project on Science, Technology, and Disability, the meeting sought to tap the problem-solving skills that people with disabilities develop to get around in the world, skills that often translate into success in science, technology, engineering, and mathematics fields. Coming up with workplace solutions for engineers and scientists is part of an effort to increase diversity and innovation in those fields. Also working toward that end are AAAS’s ENTRY POINT! and ACCESS programs, co-sponsored by NASA, which place students with disabilities in summer internships at corporations and at federal laboratories.

“I gained further knowledge through the FAME program, and then in turn I passed that knowledge on to my students,” said Marlo Thigpen, a math teacher at Shaw Middle School at Garnett-Patterson Campus. “I try to expose students to everything possible so that they can succeed. As I gain more, I give them more.”