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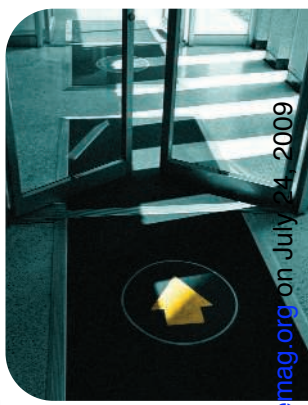
New Career Paths for Scientists

Last week on this page, I stressed the benefits to both science and society of transitioning well-trained scientists into a broad array of endeavors, in research and in other roles. Here I suggest two strategies that could help achieve this goal.

For more than 30 years, the Science and Technology Policy Fellowships of the American Association for the Advancement of Science have recruited U.S. scientists and engineers at various stages of their careers, from ages 25 to 72, to work in the U.S. federal government for a year. Similar 10-week fellowships at the U.S. National Academies in Washington, DC, allow graduate students and postdoctoral fellows in science and engineering from many nations to contribute to science and technology policy issues. Other fellowship opportunities in the United States and elsewhere provide exposure to the worlds of policy-making, teaching, and communication, among others (see *Science* Careers, p. 390).



These valuable programs serve multiple purposes, most obviously allowing scientists and engineers to explore possible careers outside of academia and industry. After fellows complete such programs, they return home and share their experiences. Thus, a single fellow can provide an entire academic department with a broader view of career paths. Working with a science fellow can also make an organization or government agency aware of the advantages of hiring full-time staff with scientific talents and connections, permanently increasing its scientific capabilities.

The several thousand past participants in these fellowship programs are engaged in various pursuits. Many are research scientists, but others have entered careers in policy, science education, journalism, and environmental protection, among others. Exemplars include physicists Rush Holt, a U.S. congressman, and E. William Colglazier, the chief of staff at the National Academies. Scientists in such nontraditional careers are invaluable as two-way interpreters: people who can readily bring the benefits of scientific analysis to their institution or profession, as well as help traditional scientists better understand how their science might contribute in new ways. Even a single such individual can make a huge difference.

There would therefore be many advantages to expanding these types of opportunities. Perhaps the simplest way would be through new short-term programs that allow fellows to sample a career in government, pre-college education, nongovernmental organizations, the media, or industry. If offered for a period of 4 months or so, such fellowships could be accommodated as temporary excursions from traditional career paths. Minimal stipends could cover living costs, as is done for some other fellowship programs, with groups of fellows being mentored by professional staff.

More ambitious would be a new type of graduate program for scientists, with a branching set of options after the first or second year. Although many students would continue to pursue the standard research path, other options would specifically prepare a student to become a professional policy analyst, a science education researcher, a science-oriented journalist, or a science curriculum specialist in a school district, for example. Although there are good stand-alone programs leading to some of these careers, most remain unconnected to standard science Ph.D. programs and are of limited capacity.

Developing new, integrated programs will require that partnerships be forged with other organizations; these could be established regionally to involve students from different universities. They can be viewed as the next logical step from programs such as the U.S. National Science Foundation (NSF) Graduate Teaching Fellows, which enables graduate students in science, technology, engineering, or math to broaden their training through extensive interactions with young students and their teachers.

According to NSF, there are more than 45,000 postdoctoral fellows in the natural and social sciences in the United States alone. Many will gather in Boston next week at the National Postdoctoral Association's Annual Meeting. They and the tens of thousands of graduate students just behind them in the pipeline represent a tremendous resource for the future. It is good news that a surprising percentage are interested in using their science training in nontraditional ways. Those of us who are their mentors must help them do so.

– Bruce Alberts

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