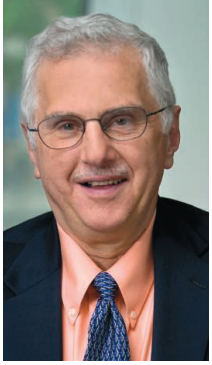

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Science Adapters Wanted

THE BIOLOGICAL SCIENCES ARE FLOURISHING, WITH AN ABUNDANCE OF FRESH, EXCITING DISCOVERIES that continue to spur the development of powerful new techniques and expand creative scientific investigation. And the core challenge of deeply understanding cells, tissues, and whole organisms promises endless possibilities for controlling human disease and rescuing the environment. But in this very exciting time to be a biological scientist, there is an ominous sense of a major crisis brewing. Budget realities have begun to constrain scientific progress across the board, with an especially heavy impact on the careers of young scientists. Beyond advocating for larger budgets for scientific research as a critical investment in each nation's future, how should the scientific community respond?

My answer—to vigorously support expanding the career opportunities for young scientists—is based on two observations. The first is that a surprisingly large portion of today's science graduate students are interested in nontraditional careers. I interact with many of these exceptionally bright and energetic young people at my home institution, the University of California, San Francisco (UCSF), and I am excited about the range of contributions that they could make to society. A recently published anonymous survey of nearly 500 UCSF doctoral students in basic biomedical sciences reveals that, by the time they enter their third year in graduate school, one-third are intending to pursue a career that does not involve laboratory research.*

My second observation stems from the enormous success of the AAAS Science and Technology Fellowship program, which brings nearly 200 highly selected scientists and engineers to Washington, DC, each year to work in government.† Many of these individuals accept permanent jobs in science public policy once their fellowship ends, and in these positions they efficiently serve as "adapters" to connect their government offices to scientists and to scientific advice. Many different parts of society urgently need such scientifically trained people to connect them to the rich resources of the scientific community.

Many possible career pathways deserve special attention, but one seems especially urgent. As science and its values become ever more central to the future of nations and the world, it becomes increasingly critical that scientists become deeply engaged in supporting the teachers and school systems that educate children. How can we best connect the invaluable resources of the many vibrant communities of science and engineering professionals to the large community of professional educators directly responsible for educating a nation's youth? My conclusion, after decades of experience in the United States, is that a new type of individual is needed inside each precollege (K-12) education system to act as the liaison between two professional worlds with very distinct cultures: that of science and that of precollege educators. Thus, I would like to challenge a group of the relevant experts—teachers, principals, superintendents, education researchers, scientists, policy-makers, and experienced science curriculum specialists from school systems—to create a 15-month program aimed at preparing and certifying outstanding Ph.D. scientists as "science curriculum specialists" whom U.S. school districts would want to hire. These individuals would need to be competitively selected, provided with prestigious fellowships to cover their living expenses, and networked to each other and to the scientific and engineering communities. The goal is to produce large numbers of school system administrators with "science in their souls," passionate people skilled at working inside the system to connect it to the very best resources available for helping science teachers to inspire their students.

The timing is perfect to spread science and its values by "spreading" young scientists and engineers into new types of careers. These young people are demonstrating a strong interest in living lives of science beyond the bench. The critical task at hand is to generate many more pathways to ease their way.

– Bruce Alberts

10.1126/science.1216650

*C. N. Fuhrmann *et al.*, *CBE Life Sci. Educ.* **10**, 239 (2011); http://lifescied.org/content/10/3/239. †http://fellowships.aaas.org.

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