

Magazine

My word

Training for the future Sherrie Hans and Tanya Awabdy

In the spring of 1995, the US National Research Council (NRC) in Washington, DC released a report on 'Reshaping the Graduate Education of Scientists and Engineers' (<http://www.nas.edu/nap/online/grad/index.html>), in response to the frustration that many young scientists were feeling over their future career prospects.

As senior graduate students, we too had felt that frustration. When the report was published we were in the throes of organizing a career development symposium at UCSF to address many of the same issues, and to discuss the problems inherent in our current system of graduate training. The NRC report added fuel to what was already a fiery debate. Here we discuss our conclusions in relation to those of the NRC report. We hope that this description of the attempts made at UCSF by graduate students, postdocs, faculty and administrators to produce a training program that is appropriate to the current state of science will promote a wider discussion of these topics.

The NRC report recommended that programs and departments should provide students with more information on scientific careers. In particular, the report emphasized that prospective graduate students should be told what the current employment prospects are for PhDs. This is an overwhelmingly important point. Most of our peers entered graduate school expecting that they would eventually conduct independent research at a university, and most students say that this is what they are still told to expect. In fact, at least 60 % of us will have to find an

alternative career. This disparity between expectation and fact sets everyone up for disappointment.

But such information is of little use to those of us who have already invested many years in a scientific career. What can be done to assist senior graduate students and postdocs who need a job now? The student and post-doc associations at UCSF decided that the best solution would be a career office tailored to post-graduate researchers. Information about the career office can be found on-line (http://hri.ucsf.edu/HRI_Career.html); your suggestions and additions are welcome. The career office is intended to be a repository for employment information, and to act as a focal point for contact between employers and potential employees. Eventually, the office will also provide other relevant resources for job hunters.

A second recommendation from the NRC report was to provide students with a variety of skills. For our purposes, we interpreted this to mean concrete job skills. Students and faculty agreed that our program already provides broad scientific knowledge and exposure to a variety of lab techniques. What we were hungry for was practical advice like how to network, how to get job interviews, how to negotiate a contract, how to write grants and proposals, and how to manage a budget. These are all skills we will need whether we remain in academic science or manage portfolios in an investment banking firm. The faculty at UCSF have responded with a seminar series for postdocs addressing many of these topics.

This response by the UCSF faculty also begins to address another need, the need for students to have support and guidance from their faculty advisors whatever their eventual career path. Whether a student is going to stay in research or not, they should have appropriate support when in the lab, so that they

don't feel abandoned and overwhelmed. Graduate school should be a positive experience. If students leave academic science, they should remain well disposed toward science and scientists; ex-students should surely be the chief source of informed public support for science.

A final important topic that the NRC report did not address is the need for a re-assessment of the career path. At one time, scientists were applying for assistant professorships by age 30. It made sense that graduate students and postdocs could survive for a few years without a great deal of money, complete insurance coverage, a retirement plan or any say in the decisions made in their academic institutions or professional societies. Now that the training period has stretched into many years, however, the position of graduate students and particularly that of postdocs should be fleshed out to include better benefits and a larger role in academic and professional decision-making bodies. Postdocs at UCSF have organized themselves to gain representation on campus committees and others are working nationally. We believe that including postdocs in the professional structure of science would improve the atmosphere of science, making it more inclusive and thus more collegial.

Despite the increasing pressures of being a scientist in today's society, students and postdocs say that they can (just!) endure the stress because they love doing science. Being realistic about job prospects, along with increased mentoring, career guidance, and better representation, will help reduce the stress without compromising the quality of our scientific training. The scientific community can only stand to gain from having its newest members be happier with their lives and better prepared for the future.

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