

Think Outside the Lab

LAST MONTH, THE U.S. NATIONAL SCIENCE FOUNDATION (NSF) RELEASED A REPORT* WITH SOME grim news that confirmed what is painfully obvious to recent Ph.D. graduates in science, technology, engineering, and mathematics (STEM) fields: Unemployment for this cohort is on the rise (at 2.4% in 2010, up nearly a percentage point since 2008). Although it remains below the U.S. national average for all workers (8.2%), for bright students who have invested many years in specialized education and training, the outlook is discouraging. Furthermore, according to an NSF survey, in 2008 only 16% of Ph.D.'s in science, engineering, and health fields held positions in academia within 3 years of earning a doctorate.† Prospects for employment can be improved, however, for STEM Ph.D.'s who make a concerted effort to learn about positions outside the lab and prepare themselves for alternative paths.

Recently, I participated in a *Science Careers* Webinar that offered advice on nonresearch employment. The timeliness of this topic was reflected in the number of registrants signed up in advance for the Webinar: 6000, far above the average for other Webinars hosted by this career resource. I was joined by Dr. Lori Conlan, director of Office of Postdoctoral Services at the U.S. National Institutes of Health, and Dr. Anish Goel, director of Geopolitical Affairs for Boeing Commercial Airplanes. We all agreed that our nonlab positions had allowed us the ability to follow our passions, forge our own paths, and provide us with flexibility to balance work and family life. Regardless of when we had made the move to a nonresearch career, no one expressed any regrets; but we agreed that the move can be challenging. It requires one to thoughtfully research career options and invest sufficient time in networking to build bridges to new communities.

Webinar participants asked about skills that are not sufficiently covered in most traditional science Ph.D. programs that are highly valued in many nonlab positions. Communications skills are near the top of our list, particularly the ability to explain complex scientific concepts to diverse audiences. Related to that is the ability to listen, which is the first step in understanding how the application of science can help meet the needs of others. Also high on the list is an understanding of people: how to recognize their strengths and shortcomings, to motivate them to achieve their best, and to assemble diverse teams that achieve what no individual could ever accomplish. Surprisingly, many Ph.D. scientists do not realize that much of their training and experience has imbued them with such skills and that they are better qualified for positions outside the lab than they think. Collaborating with interdisciplinary colleagues on projects over long distances, writing successful research proposals, planning the logistics for complex field experiments, analyzing large data sets, and contributing in meaningful ways to committee activities require skills that are relevant to the nonlab working world.

A Ph.D. in a STEM field opens doors, rather than closes them, but opening those doors is not easy. Before applying for any position, candidates should consider the breadth of their experience and make an honest assessment of themselves. Are they better suited to working alone, as part of a team, or as a team leader? What do they value most: that they solved the right problem, that they solved the problem correctly, that they got the job done, or how everyone felt about the job? A good place to start is with an Individual Development Plan (<http://myidp.sciencecareers.org>), an online resource to help scientists examine their skills, interests, and values; explore scientific career paths to find which ones are a best fit; and set strategic goals for the coming year.

If you are considering making the move from the lab, you are not alone. This transition is taking place at all career levels, spurred by different motivations. Whatever the reason, many have successfully taken this road, and so can you.

— Marcia McNutt

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*www.nsf.gov/statistics/infbrief/nsf14310/?WT.mc_id=USNSF_179. †www.nsf.gov/statistics/seind12/c3/tt03-20.htm.



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