

Recent Career Surveys

By Patricia Hausman

The National Association of Graduate-Professional Students released results of its [Doctoral Program Survey](#) in late October, and the news was quite encouraging for doctoral education in general, and scientific fields in particular.

Consistent with the goals of NAGPS, the survey focuses on the graduate school experience, student satisfaction, and adherence to practices that have been recommended by a variety of national associations. The overall message was clearly positive, with more than 80% of participants describing themselves as satisfied with their doctoral programs and their advisors. Roughly similar proportions also said they would recommend their programs to prospective students.

[Results by discipline](#) showed some intriguing differences between students in the natural sciences and engineering as compared to those in other fields. Almost two-thirds of doctoral students in engineering described their programs as providing sufficient training for academic careers, compared to only about one-fifth of those in the humanities. Ratings for life sciences, psychology and social sciences generally fell between these two extremes. Despite this, concerns with the adequacy of teaching experience were evident. Fewer than half the students in the life sciences, for example, were confident that they were receiving sufficient training for teaching careers.

Attitudes toward available funding were positive. Seventy to eighty percent of students majoring in engineering, life or physical sciences expressed satisfaction with their level of financial support—as compared to 50 to 60% of their counterparts in the humanities, education, and social sciences.

The full report includes [data disaggregated by institution](#) for schools whose students participated in sufficient numbers. While the NAGPS stresses that participants were not randomly sampled, it does present data suggesting that the demographics are similar to those of other recent cohorts of doctoral students.

The NAGPS survey is a follow-up to a pilot project, the [Survey on Doctoral Education and Career Preparation](#), conducted a year earlier. This survey of 4,000 students representing 11 arts and sciences disciplines at several dozen universities found that interest in academic careers varied by demographic group and by discipline. Specifically:

- Sixty-seven per cent of men expressed a desire for a faculty position, compared to 60% of women.
- A gap of similar magnitude was found between whites and nonwhites, with 64% of the former, but only 58% of the latter aspiring to faculty careers.
- Females were more likely than males to want positions in community colleges, liberal arts colleges, and comprehensive universities. By contrast, males were more interested than females in becoming faculty members at research universities.

In yet another survey, Catherine Millett and Michael Nettles of the University of Michigan at Ann Arbor queried students at 21 U.S. universities for details about research productivity while enrolled in doctoral education. The [Millett-Nettles survey](#) also asked about faculty mentoring experiences—as well as an array of questions about student, faculty, and institutional characteristics.

The findings are presented for five basic disciplinary groupings: sciences and mathematics; engineering, social sciences, education; and humanities. Results for

sciences show considerable variation in research productivity by sex and race. Differences in the desire for academic careers, it seems, may influence not only choices made after graduation, but also during the course of doctoral education.

Students were not the only focus of recent surveys. A recent issue of *Science* reports the results of a large-scale [survey of life scientists](#) who are members of the American Association for the Advancement of Science. Notably, the survey find an overwhelming majority of respondents (86%) to be satisfied with their careers, with many describing themselves as "highly satisfied." Few (1%) are unemployed, and a large majority consider themselves unlikely to seek a new job within the coming year.

Primary reasons for pursuing a career in the life sciences revealed a distinctive profile. From a list of possible motivations, the most commonly cited were "intellectual challenge" and "autonomy on the job." Income was noticeably further down the list. Consistent with this desire for autonomy, self-employed respondents appeared the happiest of the lot—and least likely to say they would be likely to be looking for a change of position.

Dissatisfaction with income, benefits, or job security was more the exception than the rule. There seemed to be suggestive evidence of a trade-off between income and satisfaction: life scientists working in industry tend to earn more than those in other sectors, yet, reported lower rates of job satisfaction than those in academic, government, or non-profit settings.

The survey did report significant salary differences between the sexes. However, these appear difficult to interpret, in part because no comparative data from other fields are presented. The results were also not controlled for time in rank, years

with current employer, hours worked, or similar factors that logically affect compensation.

In terms of career satisfaction, females reported modestly lower levels than males in the areas of job security, recognition, promotion opportunities, and income. Again, what to make of these findings is unclear, since women acknowledged that they had put more emphasis on lifestyle factors such as job location, working hours and conditions than on income-related considerations.

Given a chance to "do it all over again," fewer than one in five respondents said they would opt for a career outside of science. Nonetheless, about a third would have modified their paths significantly, for instance, to obtain more (or different) educational credentials. Those who had never earned a doctoral or medical degree were the most likely to say they would have done things differently if given the chance.

The survey report is accompanied by [profiles](#) of a number of respondents who volunteered to discuss their careers with *Science* reporters. Those featured include: J. Robert Beck, vice president and chief information officer at Fox Chase Cancer Center in Philadelphia; Stuart Firestein, associate professor, Columbia University; Finnie A. Murray, dean of arts and sciences at Texas A&M University, Commerce; William Rogers, behavioral ecologist at Winthrop University; Mary-Claire King, geneticist at the University of Washington, Seattle; Tony Day, head of structural biology at Genencor Corporation; Linda Cork, chair of comparative medicine department at Stanford University; and Xiao-Dong Gao, a biochemist and fourth-year post-doc at the State University of New York, Stony Brook.

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