

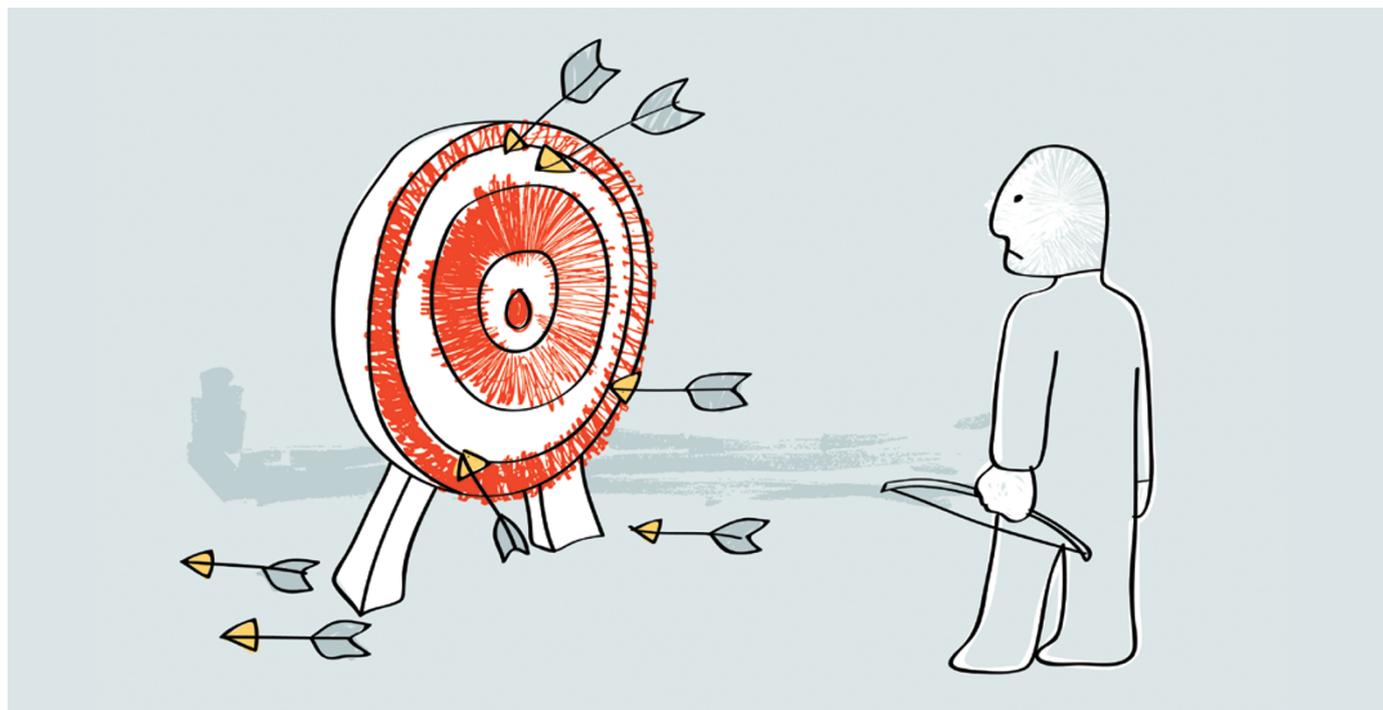
CAREERS

TURNING POINT Researcher recalls how a shift in focus led to a brain-research post **p.537**

PAY GAP Salary of Canadian female faculty falls short of their male colleagues **p.537**

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I. CHAN



POSTGRADUATE OPTIONS

Academia misses the mark

Careers advice offered at US institutes is lacking for doctoral students disillusioned with the prospect of an academic career.

BY KAREN KAPLAN

A US study confirms what many observers of and participants in graduate-level science education have long suspected: that physical and natural-sciences graduate students become less interested in academic careers as they progress through their degrees. This is the latest study to suggest that there is an increase in disillusionment as students get closer to graduation.

According to the authors of the most recent report¹, the findings underscore the importance of broad-based career guidance and mentoring at US universities, as well as the growing need for university administrators, faculty members and advisers to provide students with information about the options in sectors such as industry, government and

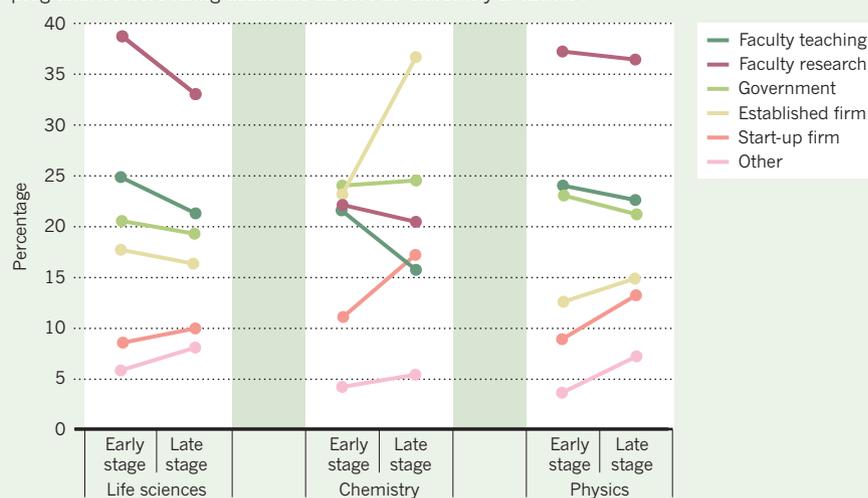
not-for-profit. It is also imperative, the authors add, for doctoral students to arm themselves with details about non-academic careers rather than relying on career-guidance services at their institutions.

The study, published on 2 May, surveyed life sciences, physics and chemistry PhD students at various stages of their programmes at top-level US research universities. Respondents in graduate programmes were asked to rate six career options and to recall how they had felt about them at the start of their PhD programme. Although a faculty post was an attractive career path for many students at the start of their programme, this preference slipped as students in all three disciplines advanced in their studies, with chemistry students showing the biggest drop (see 'Losing appeal').

A small group of respondents in all three disciplines said that faculty members, supervisors, advisers and mentors encouraged them to pursue academic research as a career option, and discouraged other career choices, including industrial research. For example, 11% of life-sciences students reported receiving a negative reaction from their laboratory supervisor or department head about pursuing a position at either an established business or a start-up company. Policy-makers, professional associations and university administrators may therefore need to supplement the career information that graduate students receive from their supervisors, and the graduate curricula should have less of a focus on academia, say the authors. Study co-author Henry Sauermann, a researcher at the College of Management at Georgia Institute of Technology in Atlanta, ►

LOSING APPEAL

By the time they got to the end of their degrees, fewer students in PhD programmes were rating academic careers as 'extremely attractive'.



SOURCE: REF. 1

► adds that their findings illustrate the disparity between the career options that advisers suggest and what positions are actually available. Sauermann encourages doctoral students to bridge this gap by researching non-academic options themselves. “It would be nice for other people to provide more information for students, but faculty and advisers don’t have that experience,” he says. “You can’t expect the chair of the chemistry department to tell you what it’s like being a researcher in industry.”

The study’s results echo those of a *Nature* survey² in June last year. A report³ co-authored by the US Council of Graduate Schools — which was compiled by university administrators and deans, industry executives and higher-education consultants, and surveyed graduate students, deans of graduate schools and employers — concluded that US universities, federal policy-makers and employers must coordinate their efforts to improve the career paths of postgraduates. “Successful career advice depends on information,” says Debra Stewart, president of the Council of Graduate Schools in Washington DC. “And one of the most important things we can do for students is to provide them with information about the career trajectory.”

Efforts to diffuse the long-term focus on academic careers at UK institutions have been under way for about a decade, says Janet Metcalfe, head of Vitae, a research-career advisory organization in Cambridge, UK. Metcalfe notes that the 2002 ‘Roberts report’ — named after its primary author, the UK scientist and education policy leader Gareth Roberts — recommended that early-career researchers receive broad-spectrum training in professional-development. As a result, she says, funds now exist to support such training at UK institutions. Vitae itself offers career guidance to junior scientists, and most universities have specialist careers advisers, Metcalfe adds.

Some top-tier US research universities have started to broaden the advice they give to science doctoral students, although there is a lingering pro-academic bias on the part of some faculty members. “Some professors probably think, ‘You don’t need to go down that route,’” says Patricia Simpson, director of the Career Services Network in the School of Chemical Sciences at the University of Illinois at Urbana-Champaign. “But most are at least open to having their students talk with me.” She says that she counsels up to 175 graduate students a year on non-academic career options. Yuree Soh, an assistant director of the Careers Development Center at Stanford University, California, emphasizes that institutional career services are crucial. She has launched several programmes, including career fairs and alumni panels, at which students can network with alumni who are not in academic posts.

Many faculty members still don’t realize that only a tiny fraction of US postgraduates land a tenure-track academic research position, says Patrick Brandt, director of science, training and diversity at the University of North Carolina in Chapel Hill. Brandt, a former biochemist, has also initiated several career-advice programmes, including one in which former researchers talk about their non-academic careers. “We are ethically bound to provide broad-spectrum career guidance to rising biomedical scientists,” he says.

Soh says that those who are in a position to influence students are showing subtle, but encouraging, signs of a shift away from the pro-academia bias. “It’s not a tidal wave,” she says. “But more questions are being asked and there is more momentum building.” ■

1. Sauermann, H. & Roach, M. *PLoS ONE* **7**, e36307 (2012).
2. Russo, G. *Nature* **475**, 533–535 (2011).
3. Wendler, C. *et al. Pathways Through Graduate School and Into Careers*. (Educational Testing Service, 2012).