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Reality Check: U.K. Report Reveals Variety of Career Paths for Ph.D.s

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Wondering what to do when you finally finish your Ph.D.? You're not alone. One source suggests that a mere 20% of British Ph.D. students have a clear idea of what to do next.

The Higher Education Statistics Agency has been trying to shed light on the places U.K. post-graduates end up by surveying them the January after they graduate. In September, the Careers Research and Advisory Centre (CRAC) published a report analyzing trends from 2004 to 2006.

"The market [for science Ph.D.s] is enormous and the options are huge." --Paul Redmond, University of Liverpool

It turns out that there haven't been many dramatic changes in those 3 years, but the results reiterate a point that's often made: Ph.D.s go into a multitude of careers sectors. "The market [for science Ph.D.s] is enormous and the options are huge," says Paul Redmond, head of the Careers and Employability Service at the University of Liverpool. "From the diversity of occupations and destinations, [Ph.D.s] are well-respected across all employment sectors," says Janet Metcalfe, director of the UK GRAD Programme and an author of the report.

Overall, the report found that anywhere from 15% to 33% of science Ph.D.s ended up in traditional postdoctoral research positions, depending on the discipline. Significant fractions went into health care (almost half of biomedical Ph.D.s), manufacturing (about a quarter of physical science and engineering Ph.D.s), and education (about half of social science Ph.D.s). The list goes on. Reassuringly, very few ended up living in their parents' flats. In fact, unemployment is one of the least likely outcomes, with between 2% and 4% of recent Ph.D.s reporting unemployment.

ACADEMIA

Despite tough competition, plenty of Ph.D.s find rewarding careers on the training ground. The academic sector employs anywhere from 35% to 50% of science Ph.D.s, depending on the subfield, in a range of occupations. That makes it the largest employment sector for U.K. science Ph.D.s--except in biomedical sciences, where more than 45% of graduates go into health and social work. Those who land jobs in academia do research, teach, and administer academic programs.

Chris Park

The default classification for Ph.D.s employed in the academic sector is "teaching professionals," a category Metcalfe says includes postdocs and permanent (academic) researchers in addition to teaching and administrative positions at universities and secondary schools. Anywhere from a low of 7% in the biological sciences to a 40% high in the social sciences end up working here. Especially toward the top of the career pyramid, these jobs offer plenty of lifestyle perks, including flexible hours and research sabbaticals. As Chris Park, director of the Graduate School at Lancaster University, puts it, "it's a common default position" for many recent Ph.D.s who have witnessed firsthand the academic environment.

At the bottom of the Ph.D.-trained career pyramid, postdoctoral research positions are especially common among biological-science Ph.D.s entering the academic sector, employing up to 36% of graduating Ph.D.s. Physical scientists had the next highest percentage in postdoc positions: 25%. "If you look at postdocs, they can get a great deal of responsibility fairly early on in their careers," Redmond says. "They have to work for it, but I think that's an attractive option."

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Anywhere from 10% to 40% of science Ph.D.s end up doing research outside academia. It's not possible to determine whether that means people got jobs in their field outside an academic institution or whether they left their field entirely, but the report does give the primary employment sectors for each discipline. In the biological sciences and in physical sciences and engineering, up to a quarter of recent Ph.D.s enter the manufacturing sector. People with a biomedical background have a very high take-up rate in health professions outside academia, around 40%. These jobs may or may not involve research in the employee's Ph.D. field, but they all rely on Ph.D. graduates' advanced skills and self-discipline.

The pharmaceutical industry, finance companies, and aerospace firms are savviest about recruiting Ph.D.s, Metcalfe says, but "many sectors do not actively recruit Ph.D. graduates. In these sectors, Ph.D. graduates are going out and finding jobs."

Janet Metcalfe

The key to employment in disciplines with less infrastructure for recruiting Ph.D.s may be in showing the initiative to find one's own place. For example, Ambili Nair did her Ph.D. in plant sciences and pursued a straightforward postdoctoral fellowship before changing directions. "I decided I didn't want to jump from one postdoc position to another," she says. "Although I did enjoy research, I wanted to do something more applied."

So Nair signed on with a biotech consulting company that allowed her to pursue her twin interests in research and business. "I wouldn't have wanted to work in a consultancy for example in IT or telecommunications. ... I wanted to stay in my field."

And it has worked out, Nair says. Now at Cambridge Healthcare and Biotech, she continues to stay up-to-date with the latest research and keeps hours that fit her lifestyle better than when she was responsible for round-the-clock laboratory experiments.

It's savvy, skilled Ph.D.s like Nair who are taking advantage of fast-paced industry jobs, Redmond says: "[Industry employers] want people who can start on Monday with a high level of knowledge and expertise."

BEYOND INDUSTRY AND ACADEMIA

Industry and academia together only employ about two-thirds of science Ph.D.s. So where is everyone else going? Well, 1.7% of all Ph.D.s become "numerical clerks and cashiers, clerical, retail, and bar staff" after graduation, as carefully counted by the Higher Education Statistics Agency.

A handful go it alone: According to the survey, 2% to 3% of science Ph.D.s start their own businesses. But most science Ph.D.s who start their own companies don't do so right out of graduate school. For example, Jeremy Mead is a former bench chemist who started his own career consulting company, Norfolk Light, after years in industry. He says the biggest barrier Ph.D.s face is "a confidence one." Students are often trapped "trying to deliver to the supervisor's agenda," Mead says, and don't recognize their own skills and options until much later in their careers.

Most physical scientists and engineers who don't pursue their discipline in industry or academia end up in the financial, business, and IT sectors (18%). Finance was also the only non-academic sector that hired more than 10% of social science Ph.D.s in 2005. Biologists entered the health industry in smaller numbers than biomedical Ph.D.s, but these numbers were offset by more frequent hiring in manufacturing, finance, business, and IT.

Big blue-chip firms may have the highest profiles in these job markets, but Redmond warns that they're not the only way in. "People look at them and think that's who it's got to be. If you look around, there's lots of small and medium firms." It may help to think entrepreneurially about employment possibilities, Redmond says, keeping in mind that even if you work for someone else, career planning in the modern economy requires promoting your personal brand: It's "all about Me, PLC," he says.

STAY TUNED

Although a Ph.D. may indicate a passion for your specialty, that alone isn't enough. "You've got to be able to package it properly," Redmond advises. "You have to tell the employer how your passion will benefit them."

One inside tip comes from Martyn Postle, founder and owner of Cambridge Healthcare and Biotech. He says he values the Ph.D.s he hires for their scientific rigor: "You have to make the best conclusions you can in the time frame, having been as rigorous as you possibly can be in the analysis and data-gathering phase. And they"--science Ph.D.s--"are very rigorous."

Postle says that many of his Ph.D.s move on after a few years in consulting, and that reflects a dimension overlooked by the survey. The survey is limited to Ph.D.s right after graduation--too early for some to have settled into a career they intend on keeping. Metcalfe says she is "dying to do a longitudinal study" to see where these young Ph.D.s go in the long term. Those getting ready to embark on a Ph.D.--and those who already have--will probably be interested in finding out, too.

Lucas Laursen is a science writer in Cambridge, U.K.	Comments, suggestions? Please send your feedback to our editor.
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