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CAREER COUNSELLING

Pick a path

Where to go to get advice on finding a job.

BY NEIL SAVAGE

Sarah Cullen was eyeing the impending end of her postdoctoral position and wondering what to do next. She had earned a PhD in microbiology and immunology at the University of Arkansas in Fayetteville in 2009, and was now studying the behaviour of breast-cancer cells. But she felt that it was time for a change: she knew that postdocs are jammed into the scientific pipeline every year but fill only a tiny number of faculty research jobs (see *Nature* 511, 255–256; 2014).

“The career options were limited, and I saw so few friends getting academic positions,” Cullen says. “Rather than being a 20-year postdoc, I decided I needed to make the jump.” She had experience only in bench work, but wanted a position that gave her more involvement with

other people and had no idea where to look.

She tried the career services at her university’s postdoctoral office, but it offered advice mainly on academic careers. So she signed into a LinkedIn discussion group hosted by the Association for Women in Science in Alexandria, Virginia, where she found posts from Sherri Edwards, a career coach close to her home in Seattle, Washington. Cullen began to attend weekly discussions that Edwards hosted for job-seekers and decided to hire her. With Edwards’s guidance, Cullen landed a project-management position at a consulting firm that runs clinical trials. “I don’t think without Sherri I would have been able to make the jump to the job I have now,” Cullen says.

Thanks to the supply–demand imbalance in academic positions, young researchers face the daunting task of trying to determine what

other jobs are available and how to get them. Career-guidance sources range from faculty mentors, advisers and other informal support to university-based counselling offices, postdoctoral offices and paid career coaches such as Edwards. But all have pros and cons (see ‘Career counsellors’). Faculty mentors are well acquainted with the scientists they mentor and the research that their protégés conduct, but are likely to know a lot less about the workforce. And although counselling offices and coaches are tightly focused on the job-search process, the offices often have limited resources, and coaching fees can be out of reach for junior scientists who have little cash to spare. It is difficult to decide which route to pursue, but career-guidance professionals in all arenas warn that young researchers today need support and advice no matter its source.

It is tough for some early-stage scientists to accept that they should get help in creating and implementing a career-development strategy, says Janet Metcalfe, head of the international career-development programme Vitae in Cambridge, UK. “We still find it very difficult to get postgrads to get professional careers advice,” she says, and she thinks that the reason is mainly emotional. “By going for careers advice, they are acknowledging that they may not get into an academic career.”

A survey that Vitae published in 2013 found that about four-fifths of postdocs aspire to a job in academia and that three-fifths expect one, but Metcalfe says that only about one-fifth wind up there. Vitae estimates that there are about 42,000 postdocs across all disciplines in the United Kingdom. “There’s a complete mismatch between expectations and reality,” Metcalfe says. And the fact that postdocs are often unaware of other opportunities — or know little about them — reinforces their idea that they should remain in academia.

OUTDATED APPROACH

The long-standing belief that an academic job is the gold standard of scientific employment is unlikely to be challenged by faculty mentors, who are more likely than career counsellors in other sectors to subscribe to that idea. “There are a lot of advisers out there who still think if you don’t stay in the ivory tower you’re a failure and you should give up your spot to someone who wants to do real science,” says Randall Ribaud, chief executive of SciPhD, a consulting firm in Rockville, Maryland, that runs career workshops and training programmes for various institutions, including ▶

CAREER COUNSELLORS

Pros and cons of different providers

FACULTY MENTORS

Pros

- Usually free
- Very familiar with scientist's work habits, strengths and weaknesses
- Understand the value of the scientist's research
- Have a network of former postdocs
- May have connections in industry, government or other sectors

Cons

- Likely to see academic jobs as gold standard
- May lack a broad view of job opportunities
- May not give much thought to networking
- May not know what hiring managers want

UNIVERSITY-BASED COUNSELLING

Pros

- Free or low-cost
- Have a broad view of job opportunities
- Understand what hiring managers are seeking
- Offer training in interviewing, CV writing, job seeking, among other skills
- May have contacts with industry and other sectors

Cons

- Often not conversant with the science
- Not universally available, and offerings differ from nation to nation
- May lack resources
- May not provide individual attention

CAREER COACHES

Pros

- Provide individualized attention
- Specialize in job-search skills such as CV writing, interview techniques and personality assessments
- Up to date on opportunities and needs in various careers
- Have networks of contacts for referrals, informational interviews and more

Cons

- Costly
- Often lack a background in science
- Can be difficult to vet
- May provide no added value to services available elsewhere for little or no cost **N.S.**

► the New York Academy of Sciences.

Ribaudo says that those who have never worked outside academia often do not realize how different industry can be. He earned a doctorate in immunology from the University of Connecticut in Farmington and spent four years as a principal investigator at the National Cancer Institute in Bethesda, Maryland, and more than five years at the gene-sequencing company Celera in Alameda, California. The biggest shift in moving from academia to government, he says, was learning to supervise people whom he had previously regarded as peers.

But in industry, he says, the focus is on developing products instead of basic research, and there is a greater emphasis on soft skills such as teamwork and communication. "The kinds of things I absorbed in my academic experience weren't compatible with how things worked in industry," says Ribaudo, who adds that he particularly had to learn how to work well with a diverse team. A corporate job often entails working not only with other scientists but also with engineers, marketing staff and salespeople. "Those communication and people skills are generally lacking in academia," he says.

Still, not all faculty advisers and mentors are completely naive about industry. Many faculty members have managed to find new funding sources by collaborating with businesses, which helps them to understand industry needs and establishes personal connections. And plenty have launched start-up companies — US researchers launched some 800 start-ups in 2013. Faculty mentors may also maintain contact with former postdocs who could provide insight into a particular industry or introductions to colleagues. And mentors themselves can provide worthwhile advice; few others may better understand the value of a postdoc's research and strengths and weaknesses as a scientist.

Still, faculty advisers and mentors are not trained in careers counselling, and young researchers may want to consult with their university careers office, the staff of which are better placed to discuss non-academic science-related opportunities in such areas as human resources, marketing, regulatory affairs, policy, law or journalism. The offices may offer tools to help scientists to assess their interests and hone their skills. Some, for instance, use tests such as the Myers-Briggs Type Indicator personality inventory to help job seekers to determine their strengths. Although the services available can vary widely, many offices offer workshops on writing resumes and cover letters, provide interview practice and set up networking events.

Such services tend to differ from nation to nation. In the United Kingdom, Vitae helps universities to provide such services, and also offers presentations about a variety of professional experiences. At its annual conference last September, Vitae presented the results of its survey, co-sponsored by *Naturejobs*, on post-PhD career outcomes in the United Kingdom. The survey showed that early-career scientists do take up a variety of posts that are completely decoupled from the bench.

Other nations in the European Union emphasize career training for doctoral students under the Bologna Process, a set of agreements that 47 European countries have signed onto. Some countries also have specific protocols.

In France, for example, universities are required to provide doctoral students with career management training. Barthélemy Durette, research and development project manager at the scientific-recruitment firm

Adoc Talent Management in Paris, says that universities have added that training in the past five or ten years. His company provides career-search training to researchers through their institutions; paid careers coaches are uncommon in France, he says.

At US institutions, the career services are notoriously inconsistent, and some university offices may not offer them to postdocs because they are not considered students and do not pay the fees that entitle them to such benefits. To fill some of those needs, postdoc offices have begun sprouting up at institutions in the past decade or so and now number about 170 around the United States. And in 2013, the US National Institutes of Health created a grant programme to help scientists to land biomedical research jobs outside academia. The award allowed Keith Micoli, head of postdoc programmes at the New York University School of Medicine, to expand his office's offerings, which include sessions on self-assessments, career goals and conflict management and presentations by people in different careers.

Where postdoc offices do not exist or fall short, campus-based groups are forming to pick up the slack. A few years ago in New Haven, Connecticut, for example, scientists formed the Career Network for student Scientists and Post-docs at Yale. "A group of us decided that there wasn't enough conversation about careers," says postdoc Shalini Nag, past president of the group, which organizes networking events and group discussions with researchers in biotechnology and pharmaceuticals, non-profit, consulting and medicine, among other sectors.

When the group formed, Yale University's postdoc office did not employ anyone solely to provide career help, but recently added a full-time director of career services. Nag welcomes the expansion, but notes that there is always

"If I was really kind of lost and I needed really close coaching, I would go with it."



Scientists at the New York Academy of Sciences attend a business-techniques course run by SciPHD.

room for improvement at Yale and elsewhere.

Saliha Yilmaz, also a postdoc at Yale, is contemplating a career outside academia. Although she found the postdoc office helpful for nuts-and-bolts support, such as help with polishing her CV, she says that she got much more out of a two-day career development workshop run by the New York Academy of Sciences. She has never paid for career coaching, but says that she is not averse to the idea. "If I was really kind of lost and I needed really close coaching, I would go with it," she says.

Professional societies also strive to fill the gap. The Federation of American Societies for Experimental Biology in Bethesda, Maryland, offers careers seminars and personalized CV critiques, and maintains a list of members who provide individual career counselling. The American Chemical Society in Washington DC and the Royal Society of Chemistry in London offer free consultations to members, and the Materials Research Society in Warrendale, Pennsylvania, holds career events at its annual spring and autumn meetings.

PERSONALIZED TECHNIQUES

Those seeking focused one-on-one attention can get it from a careers coach, assuming they have the cash. Edwards helps her clients to improve their CVs, cover letters and interview techniques, as well as to identify their strengths and learn how to best present those to a potential employer. "They come to me because many times they have difficulty articulating their value," she says. She estimates that she has worked with dozens of scientists in the past 17 years, and all but a couple got a job in their chosen field within a year of hiring her. As for rates, most US coaches charge US\$100–300 per hour, usually for several sessions over a number of months. "It's expensive, but I was at the point where I needed to

have the success and make the jump and move on," says Cullen, who says that her investment sharpened her focus and helped her to develop the networking skills and mindset that led to a job offer. "When I got my first pay cheque, my husband said, 'You know, all the fees you paid for coaching services were recouped with that pay cheque,'" she says.

Finding an effective coach is equivalent to finding any other service provider. Although coaches can become certified, it is not a requirement. Some coaches argue that certification is important, but others say that outcome is the most significant metric. "In my profession, anybody can be a coach, and I would want to know, 'Show me the results. What have you done?'" Edwards says. Most coaches say that they are happy to let prospective clients talk to previous clients. And often the speakers that US postdoc offices bring in to offer workshops also provide coaching, which can be a good way to learn how they operate. Trade groups for coaches such as the National Career Development Association in Broken Arrow, Oklahoma; the International Coach Federation in Lexington, Kentucky; and the Professional Association of Résumé Writers & Career Coaches in St Petersburg, Florida, offer searchable directories on their members, to whom they also sell certification services. In the end, the choice often comes down to whether a client likes the coach's approach.

Forging a viable science-related career path outside academia is not an easy process, but it need not be a solo endeavour. "It does take work and effort, and in the end, nobody else can do it for you," says Micoli. "But there are people willing to help." ■

Neil Savage is a freelance writer in Lowell, Massachusetts.

TRAINING

Career bank

Biomedical scientists who work outside academia will share information about their careers with the University of California, San Francisco, as part of a programme funded by the US National Institutes of Health. The effort, Motivating Informed Decisions (MIND), aims to educate graduate students and postdocs about non-academic research and career paths. The university plans to recruit a few hundred professionals as MIND volunteers over the next couple of years, says programme manager Elizabeth Silva. "What we hope it will do is expose trainees to careers that they didn't know about," she says. Data such as the skills, tasks, and degrees required for a job will be aggregated and anonymized into a resource called the 'MINDbank' that could eventually help science trainees throughout the United States.

FUNDING

Spread sparse grants

Some well-funded researchers will soon have one fewer option for getting grants. Starting next year, the National Institute of General Medical Sciences in Bethesda, Maryland, will not award large grants to researchers who already have one. The goal is to spread sparse funds across more labs, says institute head Jon Lorsch. He estimates that the policy will free up about 25 grants a year to help launch labs or support ones in danger of closing. "We really want to have as diverse and broad a scientific portfolio as we can," he says. "Any small amount is going to help the great scientists who are struggling."

INCLUSIVITY

Mentor matters

Better mentoring could help people from under-represented groups to gain and retain faculty positions. That is the conclusion of interviews of 58 Mexican American, African American, and Puerto Rican faculty members across 22 US research institutions between 2010 and 2012 (R. E. Zambrana *et al. Am. Ed. Res. J.* **52**, 40–72; 2015). More than 25% of those surveyed said that poor mentoring had "very significantly" affected their careers. Study head Ruth Zambrana at the University of Maryland in College Park says that effective mentors value their protégés' research agendas, help them to expand their networks, offer emotional support and provide 'political guidance'.