

# CAREERS

**COMMUNICATION** Meet the six new columnists for Careers p.117

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## CAREER PATHS

# Back to the bench

*Grants and fellowship programmes can lessen the shock of re-entry for researchers who have taken a career break.*

BY KENDALL POWELL

When Jane Skok stopped working in the lab in 1985, she was still using “those squeezey things to pipette”, she recalls, and the polymerase chain reaction, a DNA amplification technique, did not exist. After earning a PhD in genetics at the Imperial Cancer Research Fund in London, now called Cancer Research UK, Skok spent ten years at home taking care of her four children. She stopped reading scientific papers, and her confidence in her ability to do research fell to “zero, bottom of the class”.

But Skok desperately missed science and needed its intellectual stimulation, so to

get reacquainted with research, she undertook a master’s degree in immunology at Imperial College London. During those studies, her mentor suggested that she apply for a Wellcome Trust Career Re-entry Fellowship — a programme akin to a postdoctoral fellowship but designed specifically for individuals returning to research after a significant career break. Fellows work in the laboratory of a sponsoring mentor for two to four years, which gives them time to retrain themselves, publish papers and realign themselves to apply for independent positions.

Grants and fellowship programmes aimed at encouraging talented and highly trained researchers to return to the scientific workforce

have proliferated in the past decade (see ‘A helping hand’). The vast majority of people taking advantage of these schemes are women who have had children and left the scientific pipeline after graduate degrees or postdoctoral positions. But programmes for returnees are picking up researchers of all sorts — men and women who have stepped away from the bench for reasons ranging from accommodating the career needs of spouses to trying out an alternative career or caring for parents.

Getting back to research after a long break is tough — returning researchers face younger competition, lack of confidence and new tools and technologies — but it is not impossible. Skok is now an immunologist at the New York University School of Medicine. She and others who have been successful in making a comeback say that finding the right fellowships and programmes is key. But that is not all it takes; it is also important to choose re-entry projects, mentors and fields wisely.

## GETTING BACK ON TRACK

Scientists who want to get back to the bench after a break must first find ways to get back into the lab environment, as Skok did with her master’s. Other strategies include volunteering in a lab for a defined period of time or taking a part-time research position.

The first step, says Carol Fishman Cohen, co-founder of the career re-entry resources company iRelaunch ([www.irelaunch.com](http://www.irelaunch.com)), based in Boston, Massachusetts, is to walk out of the door. “Get out of the house,” she says. “Go to conferences and lectures to meet other people in your field.”

But that does not mean accepting just any position. Ruth Ross, now a molecular pharmacologist at the University of Aberdeen, UK, sought a position as a laboratory technician after a four-year childcare break. She was turned away as over-qualified, with a PhD and two postdocs on her CV. But that rejection kept her from going backwards. The hiring investigator did her a favour, she says, by not giving her the technician job. “It’s impossible to move from that into being an academic,” says Ross.

Instead, the investigator pointed her to the Wellcome Trust re-entry programme. Before applying for it, Ross spent a year teaching lab courses, reading the literature and looking for a suitable research sponsor and proposal on which to base her application.

The key, she says, was finding a project that was doable for someone coming back from a break, but competitive enough to launch a ▶

► career. “I had been at home with my children. The project had to be something that would give me retraining but would also be at the forefront of research,” says Ross.

The retraining should involve minimal updating, so the work should build on the returning researcher’s existing technical skills, advises Ross. She also suggests learning about re-entry fellowships and identifying potential sponsors before taking a break, and then staying in touch with them. Ross and others say that it is vital to find a mentor who is willing to take a chance and who is supportive and flexible about the need to work part-time when starting back. Potential sponsors can be identified at conferences, or by contacting ex-colleagues or perusing job advertisements.

Knowing about a fellowship programme before taking a break can be a career saver. Allison Arnold did a postdoc at Stanford University in Palo Alto, California, where she developed a computer model to test treatments for walking disabilities. But after the postdoc, and before she was ready to enter the job market herself, Arnold moved across the country to accommodate her husband’s scientific career. A newborn kept her from the lab for two years.

“Fortunately, I had heard of the National Institutes of Health [NIH] re-entry supplements before I left Stanford,” says Arnold, who

has taken advantage of such a grant to get a job as a research associate at Harvard University’s Concord Field Station in Bedford, Massachusetts. “Without it, I would have quit my research career,” she says. Arnold is studying muscle forces in goats and guinea fowl, a project that could end up validating her post-doctoral computer model.



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Carol Fishman Cohen

benefits, and includes a travel and research-expense budget. Peter Ogunbiyi, programme director in the diversity training branch of the NIH’s National Cancer Institute (NCI), notes that the NCI currently funds five re-entry supplements, and generally accepts all

applications, as long as they meet the eligibility criteria. Historically, the numbers of applications have been low.

Aspiring returnees who are not aware of re-entry programmes should stay alert for valuable opportunities. Margaret Rayman, who now researches nutritional medicine at the University of Surrey in Guildford, UK, learned of a scheme purely by chance. After a 17-year career break, Rayman had given up on getting back to science. But she heard about the Daphne Jackson Fellowship on the radio. The UK scheme, targeted at anyone returning to research from a break for family reasons, boasts a 96% success rate for fellows resuming a scientific career. Rayman used the fellowship to retrain, encouraged by a friend who worked at the University of Surrey. “The fellowship got me my credibility back — without it, I wouldn’t be a full professor,” says Rayman.

One of the biggest hurdles that Rayman faced was a lack of self-confidence — a common problem. Cohen advises returnees to meet with past colleagues, who will probably still think of them in a professional context, but warns not to pump them for recommendations or jobs; instead, she suggests asking them how research in their field has changed in the intervening years, and using the opportunity to build self-esteem. Returnees

## USEFUL PROGRAMMES

### A helping hand

#### Wellcome Trust Career Re-entry Fellowship

What: A full- or part-time fellowship of 2–4 years at an institution in Britain or Ireland. Applicants need a sponsor to provide laboratory space. Who: Researchers with at least two years of postdoctoral experience who have taken a break of two or more years and are residents of the European Economic Area or have done a degree in Britain or Ireland. How much: Provides the applicant’s salary (based on institutional standards) and research and travel expenses. Current awards are £250,000–300,000 (US\$410,000–490,000). Success rates for applications are 20–30%. [go.nature.com/mjissg](http://go.nature.com/mjissg)

#### Daphne Jackson Fellowship

What: A two-year, part-time fellowship to help UK researchers returning to science, technology, engineering and maths (STEM)

fields. Includes 100 hours of tailored retraining per year. Who: UK residents or people with indefinite leave to remain, who have a PhD or at least a first degree in STEM and three years of work experience, and who have taken a career break of two years or more. How much: A stipend to cover a part-time salary and £1,000 a year for research expenses not covered by the laboratory. [www.daphnejackson.org](http://www.daphnejackson.org)

#### NIH Research Supplements to Promote Re-Entry into Biomedical and Behavioral Research Careers

What: Supplements to active US National Institutes of Health research grants, to support hiring people with high potential to re-enter research. The parent grant must have at least two years of funding left at the time of application. Research may be full- or part-time. Who: US citizens or permanent

residents with a doctoral-level degree who were in a postdoctoral or faculty position at the time they left research, and have had a break of 1–8 years. How much: Salary and benefits (based on institutional standards) for 1–3 years and up to \$10,000 for supplies, travel and publication costs. [go.nature.com/rc3arp](http://go.nature.com/rc3arp)

#### Helmholtz Association re-entry positions and equal-opportunity initiatives

What: Programmes to encourage re-entry and promotion within the research workforce at the 17 Helmholtz Centres in Germany, especially for women. Each centre has its own positions. For example, in 2010, the Karlsruhe Institute of Technology had eight re-entry positions that included full salary and benefits. All full-time postdocs and faculty-level positions at Helmholtz Centres get government-paid parental

leave of up to 12 months, at 65% of normal income. [go.nature.com/vjstwj](http://go.nature.com/vjstwj)

#### Massachusetts Institute of Technology (MIT) Career Re-engineering Program

What: A 12-month, part-time programme to help relaunch careers. Includes a one-semester MIT course, career-development workshops, an internship or research project and a final paper and presentation. Who: Applicants with at least a bachelor’s degree. How much: For 2010–11, tuition and fees cost about \$13,000. [go.nature.com/fr2epe](http://go.nature.com/fr2epe)

#### Open University Return to Science, Engineering and Technology (SET) Course

What: A ten-week online course to assist a return to SET careers. Who: Students in Europe. How much: From £205 (in Britain) to £440 (other areas). [go.nature.com/qxj1ws](http://go.nature.com/qxj1ws)

should discuss their career aspirations with family and friends to rehearse for more formal interviews.

### BENEFITS TO TAKING A BREAK

Spending time away from research brings many challenges, but also some advantages. Returnees, says Cohen, offer more experience and maturity than early-career scientists straight out of university, and have a renewed enthusiasm and excitement for their field. “These are huge benefits in the employer’s eyes,” says Cohen.

After a bachelor’s degree in biology, Michelle Kwak tried her hand at several unrelated careers, but eventually got back to science through a part-time programme at the Massachusetts Institute of Technology (MIT) in Cambridge that combined MIT courses with career-development workshops and culminated in an internship.

Kwak, now a neuroscience technician at MIT, plans to apply to PhD programmes next. The straight track from bachelor’s to PhD “would have been more efficient”, she says, “but exploring these other areas helped me develop as a person”.

David Karlin, a virologist at the University of Oxford, UK, also says that his time away improved his outlook. Karlin left research to direct a programme teaching molecular and cellular biology to the public at a university in France. During his seven-year break, he kept up research with collaborators, which helped with his Wellcome fellowship application.

Karlin’s outreach work gave him a broader perspective and vision for his research. “I was hired at Oxford precisely because I had an original approach,” he says. “I cannot hide my atypical career path, so, as a colleague says, ‘When you have a wooden leg, shake it!’”

Skok and others encourage young researchers to consider a break, especially if they become stretched between demanding research and responsibilities at home. Despite the challenges associated with returning to research after a long hiatus, many researchers have made the transition with the right planning, and the rewards are huge — especially for those who are passionate about the scientific process.

After several career stops and starts — necessary to take care of a son who needed two heart transplants — Ana Hoffenberg, a medical doctor, gravitated towards research. Driven by her intellectual curiosity and passion for knowledge, she eventually landed a postdoc fellowship at the University of Colorado in Denver. “I’m hoping this will be the opening door to an independent research career,” she says. “With the hospital bills, I needed income. But I also needed the playground in my mind.” ■

**Kendall Powell** is a freelance science writer based in Lafayette, Colorado.

### COMMUNICATION

# Voices for Careers

*Columnist competition yields six winners.*



BY KAREN KAPLAN

**N**ature would like to introduce our six new Careers columnists, the winners of an international contest.

Earlier this year, we sought essayists immersed in the challenges of graduate studies and postdoctoral fellowships — stages that are crucial to fledgling researchers. We selected three doctoral students and three postdocs from four continents, who conduct research in the diverse fields of synthetic chemistry, genetics, civil and environmental engineering, ecology, pain research and cell biology. Half of them work in the United States, and half in other countries. Choosing the winners was even more daunting than for our past contests; we received nearly 300 entries from close to 40 countries.

Competition was fierce and we chose an elite group of writers who have not only outstanding communication skills, but also a variety of backgrounds and interests. The winning entries were incisive, contemplative and clever — and told compelling stories.

The columns, and shorter journal entries, will run online at [go.nature.com/uy5nyc](http://go.nature.com/uy5nyc), with a few columns appearing periodically in the section’s print edition.

### A PROBLEM SHARED

Newly minted Careers columnist Adam James, a PhD candidate in synthetic chemistry at the University of Tasmania in Hobart, Australia, is motivated to write because he enjoys outlining problems and offering answers. James, who took philosophy courses as an undergraduate, is proud of his ability to construct an argument, and hopes to offer meaningful and valid solutions to common concerns encountered by our readers.

Lucie Low, originally from the United

Kingdom, is a postdoc studying the neuroscience of chronic pain at McGill University in Montreal, Canada. In her sample column entry, she brought both a keen sense of humour and a serious outlook to a discussion of Canadian laws that tax postdoc stipends yet leave postdoctoral researchers with minimal employment benefits.

First-year PhD student Lydia Murray also has a wry sense of humour. In her writing, she wants to help others come to terms with the ‘lows’ of research. For Murray, who is studying molecular genetics and cell biology at the University of Glasgow, UK, the importance of buoying others’ spirits is one of the most important lessons from her first year of graduate study. Giving a forlorn colleague a pat on the back might assist them more than is immediately obvious, she writes.

### COMMUNICATION OF ALL SORTS

Mariano Loza-Coll, now in his second postdoc position, sees communication as science’s biggest single challenge. A native of Argentina, Loza-Coll works at the Salk Institute for Biological Studies in La Jolla, California, and would like to promote more effective transmission of ideas between scientists, the media and the public. He hopes to meet this goal through his research and writing.

Andrew Peterman offers the perspective of an academic who has ties to the corporate world. A PhD candidate in civil and environmental engineering at Stanford University in California, Peterman has researched and devised strategies to help Walt Disney Imagineering in Glendale, California, to reduce energy consumption. That taught him a lesson about communication: it is often a challenge, even among colleagues.

Communicating science, in this case to students, is also an interest of Gaston Small, a postdoc in ecology at the University of Minnesota in St Paul. Small, who has a PhD in ecology and a master’s degree in teaching with a focus on science education, is investigating the role of microbes in increased nitrate concentrations in Lake Superior. With two young children, Small is also addressing the challenges of a work–life balance from a father’s point of view. He is in the process of deciding whether to stay in research or return to the classroom.

We hope that readers will track our columnists’ progress, points of view and perspectives with interest as they pursue their own career aims. And we offer our sincere thanks to all who applied. ■

L. ALLEN/CORBIS