

# CAREERS

**IMMIGRATION** International UK students don't overstay their visas **p.299**

**DIVERSITY** White men dominate US scientific faculty rolls **p.299**

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DAVID SALAFIA/REEBOK



Developmental biologist Daisy Robinton earns extra cash by modelling for athletic companies such as Reebok.

## OUTSIDE THE LAB

# Side jobs for scientists

*Paid work beyond the bench can offer a welcome source of income to cash-strapped junior researchers and provide opportunities for career development.*

BY ELIE DOLGIN

Daisy Robinton expected to study mouse models of development when she started her PhD seven years ago, not to become a model herself. She quickly found success in her research, showing that a gene involved in embryonic-stem-cell differentiation can also initiate liver cancer in later life (L. H. Nguyen *et al. Cancer Cell* **26**, 248–261; 2014), and co-authoring the most-cited review paper of all time on reprogrammed stem cells (D. A. Robinton and G. Q. Daley *Nature* **481**, 295–305; 2012).

But Robinton also found herself struggling to live on her modest PhD stipend, and started to look for extra work. That's why in

many Reebok stores today, a billboard bearing her life-size likeness is on display, strategically positioned to best display the company's latest product. Robinton now spends around two days each month at photo shoots, mostly for athletic-apparel companies. During her PhD programme, that work paid enough to nearly double her modest income, and it continues to ease her way financially while she completes her postdoc in neurodevelopment at Boston Children's Hospital in Massachusetts.

Robinton is one of many early-career researchers who take on jobs outside the lab to help balance the books. "Being able to supplement my income instead of increasing my debt load was a big deal," says Robinton. She makes up for lost research hours by working more

on evenings and at weekends, and declines fashion work that cuts into her lab time. "My number-one priority will always be my science," she says.

Her attitude is the right one for any junior researcher considering work outside the lab, says Alaina Levine, a science and engineering careers consultant in Tucson, Arizona. Graduate students and postdocs need to think strategically, Levine says, about whether a side gig will support their overall career plan (or at least their happiness and well-being) and whether they realistically have the time.

In addition to extra cash, a part-time second job can yield opportunities for skill development and professional advancement, Levine adds. Yet any such work must come in lieu ►

► of leisure time and never detract from a degree programme, experiment or manuscript. “Eyes on the prize,” she says.

Kevin Haggerty, a sociologist and criminologist at the University of Alberta in Edmonton, Canada, generally cautions students against pursuing many extracurricular activities, including paid ones. “It’s best to focus on your studies,” says Haggerty, who co-authored a book called *57 Ways to Screw Up in Grad School* (University of Chicago Press, 2015).

But if the income from a part-time gig is necessary, Haggerty recommends being upfront with supervisors. Mentors are usually understanding of financial woes, he says, adding that they might help junior researchers to secure second jobs in their academic area (see ‘Finding a side job that works for you’).

Some scientists think that it’s OK to keep their private lives and jobs to themselves. Molecular biologist Adam Ruben, who works on malaria-vaccine development at biotechnology firm Sanaria in Rockville, Maryland, is one. As a PhD student at Johns Hopkins University in Baltimore, Maryland, he studied the biophysical properties of potential new malaria drugs — while writing humour columns, performing at storytelling shows and comedy clubs and entertaining wedding guests as a fake rabbi. He didn’t mention this work to his PhD supervisor.

Ruben — who continues to tell stories and jokes on stage and writes a monthly humour column for *Science* — says that none of his side jobs has ever undermined his scientific research. Nonetheless, his supervisor was unnerved to learn of Ruben’s comedy work through a profile in the campus newspaper. Because Ruben was never prepared to stop performing, even though his adviser was against it, he decided that he needed only to be more discreet about moonlighting.

Emily Roberts, co-founder of the website Grad Student Finances, which provides money-management advice for PhD students, supports that view. “If your adviser is happy with your progress, it’s not really any of their business what you do with the rest of your

**“Being able to supplement my income instead of increasing my debt load was a big deal.”**

time, so why mention it?” she says. “My attitude is, ‘It’s better to ask for forgiveness than permission.’” Some full-time PhD programmes discourage or forbid paid work outside the institution — although, according to Roberts, as long as their research doesn’t suffer, few people ever get into trouble purely for taking on a side job. Moonlighting usually flies under the radar — as it did for Grace Lee, who started a digital-marketing consultancy towards the end of her neuroscience PhD at the University of British Columbia in Vancouver, Canada. To this day, Lee doubts that her adviser knows about her side job. “I did my work, I met deadlines,” she says. “And then I just did what I wanted to do without telling anyone.”

#### ORGANIZE YOUR TIME

The key to a successful side job is often to time management. Social-neuroscience PhD student Shannon Burns puts in about 50 hours’ work from Monday to Friday in her neuroimaging lab at the University of California, Los Angeles. On Saturdays, she carves out time to be a hairstyle vlogger, producing online video tutorials for replicating popular coiffures from television shows and films such as *Game of Thrones* and *Star Wars*. One week, she does all of the filming at home; the next she records voice-overs and edits the how-to videos before posting them on YouTube under the username Silvousplaits. Burns estimates that she earns

US\$200–250 per month in advertising revenue from the site. “It’s enough to pay for my groceries,” she says.

Amanda Welch used a different time-blocking strategy to maintain a firewall between her postdoctoral research into the epigenetics of blood-pressure regulation at the University of Florida in Gainesville and her freelance work editing scientific grant applications. “I had a strict rule,” she says. In her office or lab, she ignored her freelance job. She also maintained separate e-mail addresses and computers, and checked non-postdoc e-mail once daily on her phone. Today, she is a full-time scientific editor and writer.

Some graduate students take a more relaxed approach to their schedule, yet manage to stay on top of multiple obligations. Vicki Johnson worked for 5–10 hours per week as an academic editor and writer — polishing up journal articles, crafting literature reviews and helping with data analysis — on top of studying public health and natural-disaster preparedness for her PhD at Massey University in Wellington, New Zealand. She found contract jobs through an online staffing platform called Elance (now Upwork).

“I took contracts as I had time,” she says, and fitted the work into her evenings and weekends or, when necessary, during usual work hours. She graduated on schedule in fewer than four years and now works full-time running a website called ProFellow that offers information about professional and academic fellowships.

#### LEARN TO MULTITASK

Not all side gigs necessarily lend themselves to easy scheduling. Robinton tries to plan her experiments around modelling gigs, but she’s not always successful.

She recalls one day last year when she agreed to an eight-hour shoot for a new line of Reebok wear on the same day that she needed to collect mouse embryos for an experiment on vertebral development. She woke up before dawn to dissect the embryos out of their mothers’ yolk sacs, and spent the rest of the day on the shoot before returning to the lab that night. The 20-plus-hour workday was worth it: detailed in as-yet unpublished work, the experiment ultimately helped Robinton to discover a protein that controls the timing of skeletal development.

Others recall similarly gruelling experiences. Christie Wilcox, a science writer and part-time postdoc studying venomous jellyfish at the University of Hawaii at Manoa, remembers a rocky period in 2013 towards the end of her PhD at the same institution. She was writing one book, editing another, blogging and taking on freelance journalism jobs, all while finishing her thesis on the evolution of lionfish.

“It was way too much,” she says. “I ended up feeling like I was constantly drowning and never had enough time to do anything well.” In hindsight, she says, she should have invested more in her mental and physical health.

### ADVICE FROM THE EXPERTS

#### Finding a side job that works for you

The best side gig is one that complements and augments your skills as a scientist. Here, the authors of three books for PhD students offer advice about how to access and make the most of part-time job opportunities.

**Ask your adviser:** Lab heads were all once low-paid graduate students, so they can empathize with the need to earn extra money — and they might know of job openings that offer career advancement, says Kevin Haggerty, co-author of *57 Ways to Screw Up in Grad School* (University of Chicago Press, 2015).

**Look elsewhere on campus:** Most universities have offices dedicated to

technology transfer, government relations or other external engagement. These frequently offer unadvertised internships for scientists with a penchant for business, law or policy, says Alaina Levine, author of *Networking for Nerds* (Wiley-Blackwell, 2015).

**Approach the lectern:** Most PhD students work as teaching assistants — leading tutorials, discussions or lab practicals — but sessional instructor positions are often available. These teaching roles don’t include any research responsibility, and they generally pay more and look better on a CV, says Adam Ruben, author of *Surviving Your Stupid, Stupid Decision to Go to Grad School* (Three Rivers Press, 2010). **E.D.**





During his PhD, Adam Ruben performed at comedy clubs to provide additional income.

Christine Buske also worked non-stop during her neuroscience PhD at the University of Toronto Mississauga in Canada. At one point, she was teaching three undergraduate courses, running a fitness class and dedicating 24 hours per week to a software start-up — all the while maintaining a colony of zebrafish to study shoaling behaviour. “It was insane,” she says. “I was on, on, on all the time.”

She toughed it out, however, padding her wallet and CV along the way. And on graduation in 2012, she managed to turn her experience into a full-time job, working as head of outreach at the start-up’s UK office. Buske now leads the European expansion of Science Exchange, a California-based outsourcing platform for research and development services. “I made strategic choices,” she says, “in what seemed like madness.”

### INVEST IN YOUR FUTURE

The income from a side job is often intermittent and unsteady. That can make it hard to incorporate into a regular budget. “But that leaves an opportunity to use that money to do things that are really going to propel you along financially,” says Amanda Ochsner, a video-game researcher who runs a personal-finance blog called Frugal PhD.

Ochsner, who landed an assistant-professor position at the University of Findlay in Ohio this year, recommends setting aside one to two months’ worth of living expenses. After that, she says, put extra savings into a retirement account. Even small amounts soon add up.

Low-paying gigs can also provide non-financial dividends down the road, notes Jennifer Polk, a Toronto-based life coach for PhDs. “It’s precisely those distractions that might get you a job later on,” she says, especially for those looking outside the lab.

That was the case for Laura Herlan, who worked part-time at a pharmacy throughout

her PhD studying the genetics of kidney injury at Charité Medical University in Berlin. The extra money was attractive, but for Herlan, a qualified pharmacist, so was the opportunity to stay on top of the newest medicines and any changes in the German drug-reimbursement system. Since graduating last year, Herlan has started work as a medical-information manager in the Berlin office of Sanofi, a global pharmaceutical company. “It’s a good fit,” Herlan says.

A side job can also provide a fallback career if the academic track doesn’t pan out. Organic chemist James Ashenhurst was doing his second postdoc in 2010 at the Hebrew University of Jerusalem when he started tutoring undergraduate students over Skype. He had been searching for chemistry jobs in industry and academia for two years, without success. His wife, chemist Janet Macdonald, was also seeking an academic appointment, so he needed something he could do wherever she was hired. “The tutoring business would provide flexibility for me to live anywhere,” he explains.

It worked out. Today, Ashenhurst’s business — now called Master Organic Chemistry — has expanded to sell study guides and is run out of the couple’s home, while Macdonald runs a nanomaterials lab at Vanderbilt University in Nashville, Tennessee.

Still, for some, a side job is simply about providing an added sense of enjoyment and work–life balance. That’s why Dirk Wenig, a postdoc at the University of Bremen’s Center for Computing and Communication Technologies in Germany, works as a bartender at a favourite pub called Schmidt’s Kneipe. “I do it because I love it,” Wenig says. “It is a great contrast to my scientific work, and it helps me to relax.” ■

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## STUDENTS

### Immigration targets

There is little evidence that large numbers of international students overstay their visas in the United Kingdom, according to a report from the Office for National Statistics (ONS). Roughly 97% of the 181,000 international students whose visas expired in 2016–17 left the United Kingdom after their studies concluded, says the report, debunking previous estimates that as many as 50,000 overseas students stay on illegally. The report cites data that are based on exit checks introduced in 2016. It says these figures more accurately reflect student behaviour than do earlier numbers calculated on the basis of the ‘International Passenger Survey’, a set of questions asked of people leaving the United Kingdom at ports or airports to determine their future plans. In its report, the ONS said it will continue to study immigration and emigration patterns, and identified a need for a greater emphasis on the complexities of life for international students. The office is expected to release plans for improving its statistics this month. The latest data have led to renewed calls for students to be taken out of UK net-migration targets.

## UNIVERSITIES

### Low diversity levels

African American, Hispanic and female faculty members at US universities continue to be under-represented in science, technology, engineering and mathematics (STEM), despite an overall trend towards greater diversity, according to a study (D. Li and C. Koedel *Educ. Res.* <http://dx.doi.org/10.3102/0013189X17726535>; 2017). The authors compared senior and junior faculty members in biology, chemistry, economics, educational leadership and policy, English and sociology across 40 public universities from 2015 to 2016. They found that diversity is greater among junior faculty members than it is among senior ones, particularly in science- and maths-intensive fields, because younger faculty members tend to come from more diverse backgrounds. However, African American faculty members remain under-represented in both groups. The authors conclude that limited diversity in academia is due primarily to high levels of under-representation in STEM fields and that non-STEM fields are more diverse. The study found that efforts to combat under-representation, launched at many institutions, bring no pay premium for new recruits who improve diversity.