

CAREERS

GRIEF Confronting loss presents difficult choices **p.571**

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DR CAMILLA NORD



Neuroscientist Rebecca Lawson forged an independent path through her postdoc positions.

CAREER PROGRESSION

Independence day

Postdocs must seek autonomy in an ever-changing career landscape.

BY CHRIS WOOLSTON

When Rebecca Lawson started her postdoc position in the lab of Geraint Rees, a neuroscientist at University College London, in 2014, she prioritized something very important to her and her future: Rebecca Lawson. “I was thinking about independence,” she says. “It’s an interesting time in your career. You’re working for someone else, but you have to have your eye on the prize.”

Before Lawson joined the lab, she had told Rees that she needed the freedom to pursue her own ideas, run her own projects and generally prepare for a future in which she would

be in charge of her own lab. “From day one, I turned up with a list of things that I wanted to work on,” Lawson says. She ended up tackling everything on that list and then some, always following her instincts and judgement to find the next step. Very rarely, she says, Rees would question her choices. “I stuck to my guns on a couple of occasions, but there wasn’t any conflict,” she says.

Postdocs have many reasons to seek some degree of independence. Future hiring committees want assurance that a postdoc can thrive beyond the shadow of their principal investigator (PI), and postdocs need to know how to publish papers and win grants on their

own to survive. For Lawson and other postdocs, establishing an identity and track record of their own is a key challenge on the path to a science career. To achieve that goal, they have to navigate often-tricky power dynamics, consider the attitudes and intentions of potential supervisors before joining a lab, set boundaries and, in some cases, learn how to say no.

Any postdoc’s quest for independence can be greatly complicated by the well-defined hierarchy in the lab, says Hugh Kearns, a lecturer at Flinders University in Adelaide, Australia, who specializes in the development and training of junior researchers. “The PI has all the power,” he says. “The postdoc ▶

► is usually new and vulnerable. They hope that advisers will look after them, and most of the time that happens. But it's a master–serf arrangement," he says. Through the weight of a recommendation letter, he adds, the PI can also decide whether a postdoc has a chance to get a job afterwards.

For this and other reasons, Kearns says, it's crucial for postdocs to investigate the PI, the lab and the lab's culture before taking a position. By asking the right questions and checking the fates of past lab members, postdocs can learn whether they'll end up working solely in the service of a PI or whether they'll have the chance to pursue their own ideas and advance their own careers. He recommends asking about important issues such as ownership of data and authorship policies. But postdocs shouldn't settle for verbal reassurance alone. "You should do some surveillance as well," he says. "Check where postdocs end up on the authorship list, and where they go when they leave the lab. You're a researcher, so do your research. Once you've joined a lab, it's probably too late."

Lawson says she researched Rees's lab before meeting him, and tried to suss out his attitude towards postdocs and their futures. "Our first meeting lasted for hours and hours," she says. "He made it explicitly clear that he cared about my career development as much as he cared about the science that I was producing." Rees encouraged Lawson to speak to other members of the lab, an exercise that confirmed her gut feeling that the lab was a place where she could pursue her own ideas and prepare for her own future.

Lawson taught herself new techniques and supervised master's-degree students to independently advance her career development (see 'Teaching tips for postdocs'). She also secured a small grant from the Experimental Psychology Society in Lancaster, UK, even though she was already working in a fully funded lab. "I wanted to demonstrate that I could do it," she says.

Rees says that almost all of his postdocs hope to lead their own groups one day, and that he tries to give them opportunities to prepare for that future. "They need to be able to be independent thinkers, but also able to work in a team," he says. "It's a difficult balance to do your own thing but also learn to trust others and develop their skills."

Lawson's commitment to her own career paid off. In 2017, she won a Wellcome Trust Sir Henry Dale Fellowship worth more than £980,000 (US\$1.3 million) over 5 years. And in 2018, she became an affiliate lecturer and the leader of her own lab at the University of Cambridge, UK, where she studies autism spectrum disorder and other developmental conditions. "I had all the skills in place to be a PI," she says.

Lawson's road to independence was smoothed by the fact that Rees had funding through a fellowship from the Wellcome Trust that allowed him to hire postdocs who weren't constrained by a grant that was tied to particular

A MENTOR'S TOOLBOX

Teaching tips for postdocs

Mentoring junior scientists helps postdocs to demonstrate their independence and build transferable skills. Hugh Kearns, a science-career specialist at Flinders University in Adelaide, Australia, urges postdocs to work out mentoring expectations and responsibilities carefully with their principal investigator (PI) before taking on students. Here is some of his advice:

- If you're going to work closely with a student, offer to be involved with the recruitment.
- Clarify how much responsibility you'll give

the student and how much credit you'll get for their work.

- Discuss how much supervision you're expected to provide.
- Discuss the types of problems that might arise — including interpersonal conflicts and poor performance — and how you might address them.
- Clarify your authority to make important decisions about research designs and budgets if the PI is unavailable for an extended period.
- Ask if there are options for receiving supervision training. **C.W.**

projects. She had faced a different situation when she accepted her first postdoc position, with Jon Roiser at University College London in 2011. In that case, she had to work on specific experiments that were spelled out in the grant. Still, she adds, "we had conversations about how I might pursue my own research interests. I've been lucky to have two bosses who had open discussions with me about my career."

In the United States, nearly half of all biomedical postdocs are working on project grants, according to a 2018 report from the National Academies of Sciences, Engineering, and Medicine in Washington DC (see go.nature.com/2mtrzcp). The report notes that PIs on project grants have wide discretion about how much freedom and support to give postdocs.

To help more postdocs to transition to independence, the academies recommend significantly increasing the number of available training grants and individual fellowships. In addition, they call on the US

National Institutes of Health (NIH) to add a new section to project-grant applications that would require PIs to spell out their commitment to the "scientific and professional development" of all postdoctoral trainees.

Independence has been a top priority for Lauren Robinson, an animal-welfare postdoc working on a project grant at the New College of Florida in Sarasota; she is currently also a visiting academic at the University of Edinburgh, UK. She says that she pursued multiple affiliations because she wanted opportunities for research and collaboration outside her specific postdoc duties, which mostly involve tracking behaviours and hormones of zoo animals. To that end, she's also editing a book on primate welfare for Springer, a division of Springer Nature, which publishes *Nature* (*Nature's* Careers team is editorially independent of its publisher). "I won a photo contest with Springer, and worked it into a book," she says. "My postdoc research doesn't focus on primates, so that project has given me a lot of independence."

Taking on tasks that go beyond the basic requirements of a position can help a postdoc to build an identity and reputation outside the lab, but finding the time to do so can be a struggle. "I feel pressure to say 'yes' to everything," Robinson says. "But I have to think about taking on too much. I believe a healthy balance produces better science."

For their own sake, postdocs have to learn how to say no, a word that marks a big step towards independence. But that can be tough, especially if the request comes from a PI, says Isaiah Hankel, a cell biologist who is founder and chief executive of Cheeky Scientist, a PhD-only career-advice business in Liberty Lake, Washington. "It's so hard for a postdoc to say no to a PI," he says.

Although it is challenging, Hankel recommends setting boundaries early in the relationship, telling PIs from the outset that the postdoc will need time for outside projects and career-development events. Postdocs should also try to get some control over their schedule from the



Isaiah Hankel runs Cheeky Scientist.

CHEWNE MAYES

beginning, he adds. “If you go into a lab and start working 16 hours a day, anything less than that will seem like slacking off,” he says.

Kearns agrees that postdocs take a risk when they turn down a PI’s request. “It’s almost impossible for them to say no without feeling like they’re going to get into trouble,” he says. He encourages postdocs to harness the power of a simple phrase: “other commitments”. As in, “I’d love to do that for you, but I have other commitments.”

A track record of independent thinking and actions can be extremely valuable for postdocs looking to move on to the next step of their careers, but that record might become distorted through conscious and unconscious bias. Lawson says that women can find it harder to be recognized for their achievements. “You hear conversations in corridors suggesting that their success was really to do with their boss or their supervisor,” she says. And they can face a double standard. “If you work very collaboratively and do well, you can be accused of not being independent enough. But if you put your head down and focus, it can be seen that you’re uncollaborative.”

Lawson says she never felt her gender caused anyone to question her independence or accomplishments, largely because she had gone to such lengths to forge her own identity in the lab.

Some scientists speculate that biased views could be an important but underappreciated obstacle to the progression of women and people from under-represented groups in science. In the United Kingdom, for example, women make up about half the of PhD students in physical or biological sciences, but their representation drops at the higher levels of a career, in a phenomenon known widely as the leaky pipeline.

Many factors play a part in this much-discussed problem — but one could be that women have a harder time convincing granting bodies, review boards and potential employers that they deserve personal credit for their accomplishments. “Maybe it’s more difficult for women, all other things being equal, to persuade appointment committees that they are independent,” says Ed Bullmore, a neuroscientist at the University of Cambridge, who says that he has seen women get unequal treatment during the hiring process. “It may be one of those ways we are biasing the odds against women.”

Bullmore thinks that scientists — including those on hiring committees — should accept and embrace the fact that nobody succeeds solely on their own.

“I don’t feel that anything significant that I’ve done has been truly independent,” he says. “It’s essential for science for people to work freely with one another.” ■

Chris Woolston is a freelance writer in Billings, Montana.

COLUMN

The price of grief

Confronting loss can present an impossible choice, says **Summer Praetorius**.

The night before an interview for my dream job as a palaeoceanographer, I talked to my brother for the last time.

The position was one I’d sought throughout my entire career — it aligned perfectly with my research interests and was my best shot at a permanent job near my husband’s work.

But the call with my brother was like a waking nightmare. I thought I was listening to him die over the phone as he gasped for breath.

This wasn’t my first confrontation with major loss. When I was five, my mother narrowly survived a terminal-cancer diagnosis. When I was in high school, my brother developed schizophrenia and alcoholism. During my undergraduate programme, my father died unexpectedly. And, while I was in graduate school, my mother had a stroke — a magnetic resonance imaging scan showed an aggressive glioblastoma that claimed her life within a few months.

I managed each of these events as best I could without letting them derail my career in science, although I longed to quit so I could shrink the widening fracture between the demands of academia and my heart. But the question would always arise: what then? So, in the end, I tethered myself to the solid rock of science and clung on tightly.

The morning after the call with my brother, the job interview was like a continuation of a bad dream. So incoherent were my thoughts that it was as if I were watching my body from above. I felt like my dreams for a career in science were evaporating. I had skirted the black hole of grief my whole life, only to collapse at this important moment.

After the interview, I returned to the lab where I was a postdoc and told a supervisor what had happened. He suggested I contact them and say I hadn’t been performing at my best, but he cautioned me to offer no excuses.

Practical advice, yes. But I think this is one reason junior researchers leave science — the demand to partition ourselves into separate entities can fragment our psyches.

Grief is like a hurricane sweeping through our brains; it can carve a fresh scarp through our self-confidence, leaving a fog in its wake. So many young scientists are already hanging on by a tenuous thread in an environment where there is no room for faltering.

This is especially true for those most susceptible to impostor syndrome — women, people of colour, anyone who belongs to an under-represented group. For those who have fought



against voices telling them that they don’t belong, this ‘brain fog’ might be perceived as proof that their dislocation in science is substantiated. Grief can be the tipping point that pushes young researchers into a false concession of their inability to hack it in science. This is echoed in a 2017 study that identifies a disproportionately high rate of mental illness among PhD students — especially those dealing with work–family conflicts (K. Levecque *et al. Res. Pol.* **46**, 868–879; 2017).

The paradox is that many scientists are driven to improve the world for humanity, but the culture of science can be dehumanizing. We need to promote a culture that recognizes our humanity, where normal, human failure and struggle are not equated with academic ineptitude.

If you are a young scientist struggling with grief, you might need time to sit with it. You might be forced to make difficult decisions. Be clear with yourself about what you are unwilling to give up, and forgive yourself the rest. You might find your goals changing on the other side of loss, but wait to make career-altering choices in the calm after the storm, not in the heat of heartache.

My brother died a week after our call. Two days after that, I was offered the job — a bitter-sweet victory. Science had ferried me to more stable ground, but demanded its fare in return. I am haunted by all that I couldn’t give my family members in their final days. But this can be the bitter choice when confronting loss as an early-career scientist — escort a loved one to their death or keep your own dreams afloat. I wish it did not have to be so stark. ■

Summer Praetorius is a research geologist at the United States Geological Survey in Menlo Park, California.