

LEE BARRETT



Uprooting researchers can drive them out of science

*Making early-career scientists change institutions frequently is disruptive and — with modern technology — unnecessary, says **Russell Garwood**.*

Many people have to move jobs and homes to build their careers. Relocation is a common disruption, sometimes desired and sometimes not. But how many careers demand that people move every few years, as science does? In how many other fields are promising recruits — who often already have a decade's education behind them — expected to uproot their families and move repeatedly for the best part of another decade?

Such frequent changes of location are unsettling and detrimental to people's personal lives. Yet there is a widespread expectation that early-career researchers should move around, to demonstrate their independence or work with new people.

This attitude partly serves as an uncomfortable reminder that some academics view junior scientists as expendable sources of cheap labour whose lives and happiness are secondary considerations. But it is also outdated, reflecting the world in which many senior scientists developed their own careers: a world in which graduates and young researchers needed to move between labs and institutions to spread their knowledge and skills and, in doing so, keep science innovative and collaborative.

The information-technology revolution of the twenty-first century has changed that. For many scientists in 2014, the physical location of a laboratory is less important than the speed of its Internet connection. If they wish, researchers can now communicate more often, and just as easily, with colleagues in a different time zone than with those in the next office.

During my current fellowship, I have worked with colleagues in the United States, Germany, Australia, Sweden and France, many of whom I have never met in person. If face-to-face interaction is essential, budget airlines allow for multiple short visits to other labs and collaborators. (I am writing this on a plane to Uppsala in Sweden for such a trip.) The day-to-day work of science has become similarly diffuse. Standardized lab equipment allows researchers to replicate experiments and results more easily than in the past, wherever the work is performed.

For some scientists, of course, the opportunity to move around is wonderful. It is perfect for people with wanderlust, who lack personal ties or who thrive in varied surroundings and on ephemeral contracts.

However, for many others this migration-centred system is hugely disruptive, and can add to the forces that squeeze talented scientists out of academia and into other careers.

The 'young' people whom science labels as in their early careers can actually be in their late twenties or thirties. Many are in long-term relationships, which causes a 'two-body

problem'. It is often not possible, or wise, for them to drop everything and move every few years, especially if they have children. Yet making the best decision for their families can harm their careers. For example, my current fellowship is based in Manchester, UK, but my partner has a job in London — a few hours away by train — and is understandably reluctant to leave. We have been very lucky: the terms of my fellowship mean that I have a degree of independence and can travel a lot, allowing us to live together. But having made the choice to reduce the amount of time spent at my institution, I find it hard to contribute to many aspects of departmental life. I worry that this might limit my future options. The effect is surely even greater for female scientists, whose careers often already suffer as a result of family obligations.

Simply put, the career framework for young scientists was established at a time when wives and partners did not necessarily work and were expected to follow the — generally male — breadwinner as he worked his way up. That (thankfully) is not the world we live in now. Society has changed and science should change with it.

Institutional policies can ease the move. In the United States, for instance, a number of universities make an effort to help to find jobs for researchers' partners. But relocation should not be necessary. In the long term, cultural change is required — just as it is to address, for example, the under-representation of women in science, which is exacerbated by the two-body problem.

There are some straightforward steps that we can take. First, guidelines for grant reviewers, job panels and academics should make clear that personal factors are as important and legitimate as professional ones when it comes to making

career choices. Instead of demanding that all young researchers move institutions, funding agencies could consider personal motivations on a case-by-case basis, just as they currently judge the strength of an applicant's science.

Second, principal investigators could ensure that young scientists have the chance to pursue independent research without leaving the lab, and to publish the results. Early-career researchers should push for such opportunities, and institutions should encourage and nurture them. For example, one afternoon a week could be set aside for early-career scientists to conduct self-directed research.

Staying in one place has the potential to stifle independence. But that risk should be measured against the danger that the scientist will be forced out of research — and that ultimately, science will lose out. ■

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