

Pulling for postdocs

Postdoctoral fellows are key to the research process in many parts of the world, yet they are often undervalued, underpaid and have limited prospects for future employment. However, change may be at hand in both the US and Europe.

The days when one could imagine starting a laboratory following a short postdoctoral position, or even with no postdoctoral training at all, are long gone. Nowadays, extensive postdoctoral training is essential not only if you are pursuing an academic career, but also for a research career in industry or biotechnology.

Although the pool of postdocs has expanded significantly in the past two decades, an increase in the number of academic positions, and other research opportunities that they can subsequently move to, has not occurred. As a result, postdocs, the research community and funding bodies are finding that the needs of this group now are markedly different. The traditional definition of postdoctoral training as a period of defined length for independent and creative research that subsequently forms the foundation for the research programme in one's laboratory still holds. But, there is greater debate about how this is best achieved and whether the majority of postdocs will have the opportunity to run their own laboratories. There now seems to be clear benefits to adopting a more structured approach to training postdocs — not dissimilar to that offered to graduate students at many American universities — and to expose them to other career possibilities than research.

In contrast with their postdoc colleagues, graduate students at most American universities enter degree-granting programmes with somewhat better articulated expectations of the relative responsibilities and obligations of the student, the mentor and the department for the training process. Graduate training typically provides regular, formal evaluations of the student's progress through a thesis committee and policies are in place for an organized administrative structure. Postdoc training not only tends to be much less formal, but postdocs as a group have a much more amorphous identity. At American universities, they are often not university employees, and therefore, lose out on benefits and job security. Within a single laboratory postdocs may be funded from more than one source, which can result in differential pay scales, access to benefits and employment tenures.

Spurred in large part by an effort to highlight and address the issues faced by postdocs, postdoctoral associations (PDAs) have mushroomed on campuses across the US. In 2003, the National Postdoctoral Association (NPA; <http://www.nationalpostdoc.org>) was established to provide a national platform to voice the systemic problems faced by postdocs. In addition to hosting an annual meeting that brings together representatives of PDAs from across the country, the NPA provides guidelines, training and site visits to assist institutions. The gains made in the past few years to enhance the postdoc experience

can be attributed to the grassroots campaigning by these associations. For example, at several institutions postdocs now have benefits such as health insurance, retirement benefits, a vacation policy and access to career development information. PDAs also provide a much-needed forum to unite the large and often disparate postdoc body in any given institution.

Despite these improvements several issues remain to be resolved. Although the NIH has established salary guidelines for its NIH–NRSA postdoctoral fellowships, whether these recommendations are adopted for postdocs who are funded from a mentor's grant is entirely at the discretion of the institute. Results of a 2005 postdoctoral survey carried out by the scientific society, Sigma Xi, indicate that a structured training programme, which includes regular review of progress and formal guidance in areas such as grant writing, teaching, lab management and negotiating skills, improves the quality of the postdoc experience and facilitates greater productivity (Davis, G. Doctors without orders. *American Scientist* **93** (3, supplement), 2005; <http://postdoc.sigmaxi.org/results>). Providing postdocs and students with greater exposure to alternative careers than the traditional goal of 'principal investigator' should be encouraged in training programmes. Fellowships that would allow postdocs to develop skills that are important for alternative career paths are one option. As many talented postdocs have limited independent funding, increasing the number of career transition awards to assist movement towards an independent research position should also be an important future goal. Postdoctoral associations are run on a largely volunteer basis and the issue of continuity within these groups would be remedied by setting up postdoctoral offices with administrative oversight

The situation of postdocs in Europe is, in some ways, better than that of their American peers as most countries have access to health care, social services, pension benefits, defined vacation time, and postdocs are often protected by contracts, which provide job security. However, other issues, such as the lack of a formal training structure and broader development of skills, are also concerns for European postdocs. Many institutions, including the EMBL in Heidelberg, the University of Dundee and Oxford University have postdoc associations. Following the model of the American NPA, a national UK postdoc association called UK National Research Staff Association launched in June this year. In addition, Eurodoc, a collective of national associations formed in 2002, aims to represent the interests of PhD students and young researchers, including postdocs, at the European level (<http://www.eurodoc.net/>).

Postdocs now form the core workforce in many laboratories and are frequently responsible, not only for scientific output, but also for training graduate students. Efforts to enhance their experience will benefit all parties involved as the available data indicates an associated increase in productivity (<http://postdoc.sigmaxi.org/results>). Improving postdoc programmes is also likely to give institutions a competitive advantage for attracting the best candidates.