

Gradline aims to inform and entertain members in the early stages of their career in microbiology. If you have any news or stories, or would like to see any topics featured, contact **Jane Westwell** (e j.westwell@sgm.ac.uk).

Beyond the postdoc – planning for a career in university research and teaching



A postdoctoral position is a transition from supervised research student/assistant to independent researcher. It involves acquisition of many skills apart from those involved in scientific research. It can be an opportunity to expand your world view from the lab bench and start to see the bigger picture in your research field. If you are nearing the end of your PhD or starting a new postdoctoral contract you may well be thinking about a career as a university lecturer. Posts for microbiology lecturers don't crop up very often in the jobs pages, but we do see some every year. The competition for these posts can be fierce so it is worth finding out what makes a successful candidate. Most lecturers have several years' postdoctoral experience; the key to their success in gaining that elusive academic post is how they used that time.

Although teaching is a significant part of the job, surprisingly, prior teaching experience is not necessarily essential for newly appointed lecturers. Universities are more interested in how a future academic plans to build up a research group, how s/he will fit in with other research interests in the department and how s/he plans to attract funding. Skills and experience that university recruiters look for include a good publication track-record, good organization and communication skills, project

planning and management, an awareness of funding issues, imagination and creative thinking. Applicants also must demonstrate motivation to succeed.

So, what is the best way of getting these skills and experience? The answer is (apart from your research) to spot and create opportunities in the lab or department and to take full advantage of staff development courses. Topics can range from career development and planning through to writing for publication, applying for funding and research ethics. Some courses may be organized by staff training units, others may fall within the remit of careers services. In the meantime here is a brief guide to equipping yourself with some essential skills and demonstrating that you have what it takes to excel as an academic.

Publications

At the risk of sounding like your PhD supervisor, publications are *the* most important way of assessing a researcher's quality. They show motivation to succeed. Quality is more important than numbers. Publications in high impact factor journals are read by the widest audience. It is a good idea to identify which journals you should be targeting in your field.

◀ A postdoc in the co-author's lab.
Bob Rastall

▼ The effects of 20 years in academic research!
Bob Rastall and University of Reading



Project planning/management

Your supervisor will set and supervise undergraduate/MSc projects and may need your help. You can take the initiative by suggesting ideas and perhaps planning the projects. You can also offer to help with supervising the student and monitoring their progress. This can be a way of starting to build your own mini research group. You could perhaps suggest a Vacation Studentship project that you could co-supervise.

Communication skills

You should take every chance to present your work orally and in writing. Submit offered oral presentations at conferences and look out for competitions such as the SGM *Young Microbiologist of the Year*. Not only will you gain experience, you could be in with a chance of winning a cash prize. Practice communicating at different levels, e.g. practical demonstrations or tutorials with undergraduate students or explaining your science at university

5 hot tips for the swiftest way to a lectureship

- Plan your personal development strategy
- Think about the career stage after next
- Take whatever professional development opportunities are on offer
- Be aware of the funding landscape and political developments affecting future research
- Publish effectively and network wisely



open days. You could even try writing for a more general scientific audience in publications like *Microbiology Today*, as well as in scientific journals.

Motivation to succeed

Show motivation by applying for research grants, going on career development courses, volunteering to give that scary talk at the big conference and networking at meetings – don't be afraid to speak to the megastars in the bar, they are more likely to be flattered than flattening.

Imaginative/creative thinking

It can be difficult to show evidence of this quality. Make yourself aware of the research going on around you, read widely and try to think laterally. With your supervisor's approval, take opportunities to branch out from your main research programme – making sure the key objectives are still met. When you apply for a lectureship, look at research interests within the department and identify possibilities of collaboration between yourself and existing staff.

Fundraising

This may be something to think about after a few years as a postdoc. You can apply for grants on your own initiative although, for some schemes, your supervisor usually has to be the named academic. Grants can support you or another researcher depending on timescales. You should make yourself familiar with the funding landscape in the UK, EU and overseas. Find out what sources of funding exist to support your research area.



Types of postdoc

Having identified how to make the most of postdoctoral positions it is worth considering the types of post that are available. There are various funding sources and each type of post will offer different opportunities and limitations. You should consider how your progress will be assessed and also find out what criteria are used to measure success – this will depend on your funding body. Generally, postdocs fall into five main categories.

1. Projects funded by the Research Councils (BBSRC, EPSRC, MRC and NERC) usually last 3 years and focus on hypothesis-driven science. Funding is obtained by the academic supervisor. Original project goals must be achieved, but there is some freedom in how you go about doing this.

2. European Commission Project Grants often involve many partners in laboratories across Europe and can involve regular travel and reporting to partners. Projects are very tightly planned with timelines, milestones and deliverables. Teamwork is the norm and you will find yourself working on a small part of a much larger research picture. Scope for innovation may be restricted. Funding is obtained by the principal scientists in the project.

3. European Marie Curie Fellowships must be taken in EU countries other than your home, so language may be an issue for some. The individual applies to the Commission together with a host academic. Projects tend not to be so tightly planned and the emphasis is very much on training. The latest programme (2006 onwards) will be posted soon (<http://cordis.europa.eu.int/mariecurie-actions/eif/home.html>).

4. Industry-funded projects are often very focused, applied and confidential. The academic supervisor usually obtains the funding. The needs of the industrial sponsors tend to be high on the agenda and the project can be subject to change. There is usually frequent reporting back to the company (good for communication skills) and excellent opportunities for professional development. It is essential to check publication possibilities with the project supervisor before accepting the post.

5. Charities tend to fund projects focused on a specific medical/clinical area and grants are awarded to the supervisor. Applications for these grants can be highly competitive. Funding bodies can be open to innovation and changes in the project's direction within limits as long as you keep them informed.

Some funding bodies have career development fellowships to facilitate the transition to independent researcher. These include the Medical Research Council (www.mrc.ac.uk), the Wellcome Trust (www.wellcome.ac.uk), The Royal Society (www.royalsoc.ac.uk) and the Biotechnology and Biological Sciences Research Council (www.bbsrc.ac.uk). Check out the various schemes on their websites.

Make a plan

Whatever the type of postdoctoral contract, make a professional development plan with your supervisor early in the appointment. Universities have a commitment to postdoctoral staff development and should support you. It will probably take two or three postdoc contracts to build up all the skills and experience you need.

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SGM Careers Administrator

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PhD one-stop-shop

1200–1400, Tuesday 4 April 2006, Warwick University

Don't miss the opportunity to visit the PhD one-stop-shop. A panel of experts will be delighted to answer your questions on a variety of career related topics, including postdoc-ing overseas, career planning, managing your supervisor, writing skills, surviving your viva, science communication and careers in publishing. Over the course of 2 hours, groups of like-minded students will get the opportunity to meet with panel members and have their questions answered. We'll also be providing a free buffet lunch.

In March, we will email an options form to postgrads who have registered for the event. Choose your topics of interest and let us know your questions and you will be allocated timed sessions with a couple of experts.

But don't forget that places are limited and will be allocated on a first come, first served basis. You need to tick the box on your registration form.