

Beyond the Bench: UK Programs That Teach Generic Skills

What constitutes successful training of scientists has evolved dramatically in recent years. A sound grasp of the subject, intellectual and technical expertise, and the joy of making discoveries are still at the core of what needs to be taught. However, scientists are required to interact with an extremely complex world, and Ph.D. training no longer leads automatically to an academic career. So it is imperative that we expand the skill set we bestow on our students.

In the UK, the need to provide training that imparts skills not related to bench research was recognized formally in a review of research assessment launched in 2002 by four funding bodies.¹ That review, known as the Roberts review, highlighted the need for researchers to develop “professional skills” in addition to their research skills to enhance their employability in or out of academia.

To address this need, universities in the UK have developed “generic” or “transferable” skills programs. Details vary slightly among institutions, but the principle of these programs is shared across the country. I am most familiar with the program at the University of Dundee and will use it as an example to illustrate what such programs offer and how they work.^{2,3}

Courses and Workshops

Generic skills programs offer a variety of courses and workshops that aim to support the development of transferable skills, while also assisting with professional and career development. The programs aim to support Ph.D. and master’s degree students and postdoctoral researchers in becoming efficient and effective world-class researchers in all kinds of different settings. Most course facilitators are external, but in many cases faculty members provide input.

Topics for courses and/or workshops include:

- Career management
- Problem solving

- Teamwork
- Leadership
- Grant writing (sometimes tailored to specific funding agencies)



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- Project management
- Scholarly writing
- Presentation skills
- Information handling and retention techniques
- Speed reading
- Interviewing skills
- Basic accounting
- Ethics
- Business skills and biotechnology
- Legal issues (intellectual property etc.)
- Spin-out companies

The programs tend to cover the entire university, but most of the courses are divided among general disciplines (arts and sciences, or arts, biosciences, and physical sciences) to ensure that advice and examples are relevant to the participants.

Funding

The program is entirely funded by Research Councils UK (RCUK) and the funding bodies they represent. All UK universities receive RCUK funding for the transferable skills training agenda. The level of funding is calculated based on the number of graduate students and postdocs employed on grants from the funding councils represented by RCUK. So the RCUK view these transferable/generic skills as an integral part of postgraduate (Ph.D. and master’s degree) training in all disciplines. They also see this as an important vehicle for contributing to the career development of postdocs.

Participation Guidelines/Requirements

RCUK has set specific guidelines for the attendance of generic skills courses. Students should attend an average of 10 days of transferable skills training per year of study, and postdocs five days of transferable skills training per year. At the University of Dundee, the



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postgraduate affairs committee has agreed to accept these guidelines as the university’s code of practice.

Most Research Councils monitor training attendance within their studentship/grant reports. They also look for a commitment to training in grant applications. At the university level, participation is monitored to ensure that all students benefit from the program. Information is passed to the postgraduate course coordinator to permit integration with thesis monitoring.

Assessing Effectiveness

Feedback collected from participants right after they attend a course is extremely positive and is of this general sort:

- “This has completely changed the way I would look at job applications.”
- “I finally feel as though I am not alone in my research career.”
- “Best course I have been on. This has saved me a huge amount of time.”
- “Opened my eyes to new options and possibilities.”

The program has run for a few years, so data can and will be collected to determine its effectiveness in preparing students and postdocs

for any workplace. This will be in the form of surveys across relevant communities (faculty, students, postdocs, employers, etc.). Monitoring will also follow the progress of students and postdocs who attended training.

The Generic Skills Program within the University Structure

Generic Skills Dundee is currently an independent unit that is managed by the vice principal of research and reports

to a variety of university committees involved in career development and postgraduate affairs. It is also linked to programs relating to public outreach and education, the career service, the postdoc association, and all graduate programs. It plays an active role in local and national initiatives and with groups that deal with the development of careers of postdocs and with commercialization.

In summary, the generic/transferable skills program tries to enhance and broaden training for postgraduate students and postdocs to support their ability to engage with the diverse and constantly changing working world they are likely to encounter when they move on. Instituting Research Council–funded programs to deliver this training ensures uniform access that is not dependent on an individual’s supervisor.

Regardless of whether a student follows the path of academic science or ventures into equally valuable nonacademic pursuits, arming her/him with a tool set that includes more than bench science–related skills is crucial. Unfortunately, the attitude that those we train who do not go on to pursue an academic career are irrelevant “by-products” is not as much a thing of the past as it should be. Nevertheless, our students will populate extremely diverse spheres of society.

We have an excellent opportunity to influence young, talented, and motivated people while we train them in science before they become politicians, teachers, business people, venture capitalists, parents, social workers, administrators, artists, fashion designers, etc. They will take with them much of what they learn during their training with us. That provides us with the chance to educate and reach the world way beyond the academic scientist’s sphere. Providing our trainees with a set of transferable skills is an excellent way to ensure their (and thus our) success, no matter where they go. ■

—*Inke Näthke, for the Women in Cell Biology Committee*

References

¹www.ra-review.ac.uk/reports/roberts.asp.

²Smaglik P. (2008). Developing generic skills. *Nature* 455, 832.

³www.dundee.ac.uk/genericskills.

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