

Australian Biochemist Students' Page

Getting the Most out of Your PhD

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As a PhD student, your days are filled with ongoing experiments, reading papers and constantly striving to achieve that one big result. In the second or third year, your thoughts start to drift to what lies ahead when you finish and what career path might suit you. Moving from the safe realms of student life into an academic or non-research position can seem a daunting prospect. A strong publication record is important to many potential career paths, and indeed is absolutely critical to obtaining further funding in research. However, there will be other expectations from you in addition to your scientific merit. Demonstrating good leadership skills, impeccable organisation and reliability are integral to your career development. To ensure you emerge from your PhD armed with these highly desirable skills, now is the time to start thinking about how to achieve them!

Funding of research is a highly competitive process, particularly in Australia. In order to rank applications, funding bodies need to assess not only your scientific credentials but also other attributes that show you have potential to be a strong leader within the scientific community. These attributes are certainly not only important to obtain research funding, they will be highly sought after by other employers, too. Even if you decide not to remain in research science, it is in your best interest to use the opportunities available to you as a student to develop these skills. Remember, whilst you are working hard at your lab bench for three or so years, your non-science peers have likely been in the workforce implementing and reinforcing their leadership and interpersonal skills, making them strong competition.

To promote independent development, students are generally encouraged to take on extra roles outside of their lab, such as teaching practical classes or taking tutorials for undergraduate students. Other activities might include working on student or institute committees, contributing to conference organisation or giving talks at schools or public events. It is these extracurricular activities that provide an opportunity to interact with others outside your scientific field and communicate science to a broader audience.

You need to find a balance between participating within the scientific community, yet not spending so much time on these activities that it becomes detrimental to your research. It is also **very** important that you don't sign up for being involved just because it will look good in your resumé. This puts added pressure on people who are genuinely interested, and wastes their time as well as your own. Plus, developing a reputation for being not particularly helpful or reliable is the last thing you want to do.

Listed below are four key areas to develop during your postgraduate studies and some ideas on how to achieve them. Don't forget, many around you have been in the same boat, so be sure to quiz them on how to best utilise your time as a student.

Time and Project Management

Planning a research project over three years generally involves most students establishing the expertise to successfully maintain the accumulation of results and their conclusions. The completion of a PhD is in itself a testament to an ability to execute long-term goals and time manage projects.

Some other ways of demonstrating good management skills might involve organising an event, whether it be a student retreat, a journal club or even fundraiser for a local charity. This reflects your initiative to lead others, plan projects from start to finish and interact with those around you.

Communication

Being able to communicate both verbally and in writing is arguably one of the most important skills a scientist can have. Opportunities to practice these skills arise through presentations to your laboratory, keeping a good lab workbook and email correspondence with your supervisor, colleagues and collaborators. There are, however, many other ways to improve your communication skills, you just need to be proactive.

Although your thesis undoubtedly provides you with the perfect opportunity to write, it is very different to preparing a research paper. Learning to write succinctly and concisely takes a lot of practice and you need to get whatever paper writing experience you can. Talk to your supervisor about writing a literature review for a paper or help prepare the methods/results sections with a colleague who is writing a manuscript. Other ways to improve your writing skills could include adding to a Wikipedia article or writing a blog (<http://alternative-scientist.blogspot.com>), either on your specific area of expertise in science or about something else completely unrelated that you are passionate about. Websites such as <http://bitesizebio.com> are full of ideas and can be quite useful.

There should be plenty of opportunities during your PhD to improve your verbal communication. Giving seminars at your institute and conferences are great practice, even if they might seem daunting and a lot of work. In addition, student or journal clubs provide a relaxed forum in which to interact with each other and are a great way to discuss new and innovative science. Conferences are also an excellent place to interact with other scientists. Start with presenting your work on a poster and talking to other presenters about their work (even if it requires a beer in hand for added confidence!).

Teaching and Supervising

An essential part of any scientific career is the supervision and mentorship of undergraduate and postgraduate students. As you are well aware, this relationship is integral to any student's growth as a scientist. A great way to become familiar with the mentoring role is to get involved

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in supervising undergraduate students within the laboratory. Take the opportunity to help them out, get involved in their planning of experiments and encourage them along their way.

Most postgraduate programs incorporate a teaching component in which students demonstrate undergraduate scientific practicals and/or tutor small groups. Alternatively, there are other teaching programs available to improve your communication skills with students. The Gene Technology Access Centre (GTAC) in Melbourne employs over 50 PhD students in any given week to work with secondary school students. Brian Stevenson, Director of GTAC, says this provides postgraduates with an opportunity to convey their passion for science to school students, and to develop communication skills that can engage and have high explanatory power to a lay audience. Such skills stand them in good stead for their future careers in science.

Roles of Responsibility

As a student, there are opportunities to take on roles of responsibility within student clubs or various committees within your department or university. Most senior scientists serve on multiple committees, so getting practice at this early on is certainly beneficial.

Otherwise, look outside the scientific box and make a contribution to other interests you might have. Sporting clubs are a great example. Become a member of the managing committee and make a contribution to the daily runnings of your club. Volunteer for an organisation that you would be interested in supporting, such as a conservation group that does tree plantings, or one of the many volunteer roles at the Australian Red Cross. Demonstrating that you can juggle multiple commitments and that you are interested in contributing to your community (scientific or otherwise) is always highly regarded.

