

Submission from the University of Sydney

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Below I respond to the particular points raised in the review.

1. *The contribution of research training programs to Australia's competitiveness in the areas of science, research and innovation*

In many areas of research it is the research students, who through their energy and enthusiasm, as well as their sheer numbers, conduct the bulk of Australian research. This is particularly important in experimental and observational disciplines, where research students outnumber academic supervisors. The experimental and observational areas of research (e.g. the physical and biological sciences, medicine, veterinary science, agriculture, engineering, and many areas within the social sciences) rely on a thriving research student culture and without this it would be impossible for Australia to compete in research internationally, and impossible to recruit top researchers to or back to Australia.

2. *The effectiveness of current Commonwealth research training schemes*

The Commonwealth research training schemes are generally good but expansion and investment to recruit the top quality minds into research would be an advantage to the country. The idea of increasing the number of APA scholarships is good, but the stipend should also be increased. There has been a substantial fall in the value of the APA stipend over the last 15 years. Consequently, an increase in the stipend rate to 150% of the current rate is required to return the value of an APA as a proportion of average weekly earnings to what it was in 1992. It is pleasing to note that the Government plans to increase the investment in APAs and increasing the number is just as important as increasing the stipend. Combining an increase in stipend with an increase in number to allow a doubling of the scheme is well justified.

Recommendation: That the base APA stipend rate be increased by 50% of its current level and the number of APAs be increased so the investment in the scheme is effectively doubled.

3. *The adequacy of current research training schemes to support Australia's anticipated future requirements for tertiary-qualified professionals in a wide range of disciplines*

I believe it is best if individual disciplines make submissions in response to this. I would not recommend the targeting of scholarships to particular areas. Such a strategy does not drive quality and may well not solve skill shortages.

4. *Adequacy of training and support available to research graduate students in Australia*

There are two aspects to this: stipend support and research support. A significant number of stipends are provided by the Federal Government (APAs, and grant supported scholarships, on ARC or NHMRC grants etc). The bench mark stipend is the APA rate. It is too low and does little to attract quality students. Many institutions and individual grant holders provide top-ups to attract quality students. Moreover, the scholarship stipend is generally set for 3 years, with a possible extension of up to 6 months. This is in contrast to the RTS support which runs for up to 4 years. It is widely accepted that 4 years is sufficient to provide internationally acceptable PhD research training so many students stay for 4 years, thus, institutions endeavour to support the final semester, from internal resources or grant funding, but do so at a cost to other programs.

Recommendation: That both stipends and RTS funding be aligned at 4 years to allow for first rate, high quality, internationally recognized PhD training.

The other aspect of support is project specific research support. This is almost invariably provided via direct grants to the supervisor. This system works reasonably well at the University of Sydney but it is a cause of concern when students are trained in areas that are not strongly supported by grants. The new Excellence in Research in Australia (ERA) data may reveal locations where there is sufficient strength to support post-graduate research training and sites of concern. Government intervention here may not be necessary as the data may inform market choices in the future and encourage students to enrol in well supported areas of strength across the country.

One failing in the research training schemes concerns international students. Most countries recognize that international research students enrich academic programs through their new perspectives and drive, they often provide skilled migration, and they fill gaps in domestic research capability (this is particularly important in Australia where the pool of domestic research students has been declining in recent years). If the international students do not stay in Australia they later serve as influential ambassadors for the future. Nevertheless, there are significant obstacles to supporting international students. The EIPRS scheme only covers the nominal tuition fees and universities are forced to top-up EIPRS funds with stipends which strain the limited discretionary funds available to universities. Furthermore, the small number of EIPRS (about 300 nationally) is highly inadequate as evidenced by 80% of international applicants at the University of Sydney cannot be accommodated by the small number of EIPRSs available.

The international EIPRS funds available are inadequate and Universities are running in deficit and can provide very few scholarships. Moreover, the requirement that fees be paid, but the complicated arrangement whereby they can be paid by non-Government funding (i.e. perhaps from other international student fees) is complex and cumbersome.

Recommendation: That positive recruitment programs to attract international research students be established and celebrated and that restrictions on how fees are paid be lifted (i.e. that simple fee waivers be allowed removing the need to pay fees from non-Government revenue).

5. *Factors for graduates that determine pursuit of a career in research*

I believe students choose research primarily out of interest but it is inevitable that the low stipend will prevent talented students, who do not have sufficient means available, from entering a career in research. This is an important access issue. See recommendation to point 2 above (raising the APA by 50%).

The next issue is that undergraduates do not see a career path in research. The low wages and consequently low esteem that academics are sometimes held in systematically interferes with recruitment. This issue was mitigated partly by the Federation Fellowship scheme that recognized the high value of researchers, their importance, influence, and standing. A premier scheme such as this is essential for maintaining the flow of top minds from undergraduate training into post-graduate research and beyond. It also allows top Australian researchers to be publicly celebrated, gives them high public credibility, and enhances their ability to influence policy within Australia.

Recommendation: That thought be given to maintaining and enhancing a premier research fellowship scheme to celebrate the value of top University researchers.

6. *Opportunities for career advancement for research graduates and staff*

There is much that is good about research and opportunities for advancement in Australia. One failing has been the difficulty in progressing from ARC Australia Research Fellowships and QEII Fellowships to Australian Professorial Fellowships. The introduction of the Future Fellowships is a good potential solution to this issue. This initiative will also help support the NHMRC Fellowship system. As noted above it is also important to maintain a premier scheme, such as the Federation Fellowship scheme to provide an ultimate goal for high performing staff.

7. *Factors determining pursuit of research opportunities overseas*

There are three: lack of infrastructure in Australia; low salaries and esteem in Australia; the limit on mechanisms supporting return to Australia.

Capital research infrastructure is the main limitation. This issue is partly being addressed through HEEF and now EIF.

The low salaries and esteem in Australia are an issue and the Federation Fellowships were good in this regard. The new Future Fellowships should help in terms of attracting new researchers back. The European Molecular Biology Laboratory initiative is also an excellent example of a discipline specific measure which will bring key staff back via the best possible route (via a key international hub).

Recommendation: That support for international engagements such as those with EMBL and with the Square Kilometre Array, be maintained and enhanced. We support the fact that the new Government has already signalled its support in these areas.

8. *Australia's ability to compete internationally for high quality researchers*

Capital infrastructure is the main issue.

Recommendation: That the EIF be further supplemented from subsequent budgets whenever possible.

9. *Whether Australia's academic workforce is ageing, and its impact on research capacity.*

The figures from the University of Sydney support a degree of ageing at the senior levels. The sector-wide data indicates that in 1991, 26% of the Australian academic workforce was aged over 50. This figure increased to 40% in 2006 (for the University of Sydney this proportion is somewhat lower at about 34%).