Submission to the

House of Representatives Inquiry into Research Training and Research Workforce Issues in Australian universities.

from RMIT University

RMIT welcomes this opportunity to contribute to the House of Representatives Inquiry into postgraduate research training and research workforce issues: these are areas of critical importance to the future of Australia's research agenda and hence to our capacity to innovate and compete in a global knowledge economy.

RMIT is a member of the Australian Technology Network (ATN) which is making a related submission. The ATN and RMIT have also made submissions to the Review into the National Innovation System. In its submissions, the ATN has proposed that systemic solutions are needed so that Australia's education and innovation systems can be world class. If our focus is firmly on lifting the quality of outcomes from across all of our research/innovation sectors then we will ensure that all Australia will reap the rewards.

Australia's research workforce is small by global standards, and is ageing. Demographer Graeme Hugo refers to a `lost generation' of Australian academics in their 20s and 30s, with this group being outnumbered by those in their 40s and 50s by 31%.[1] He argues that Australian universities are facing great challenges around recruitment and retention, particularly given the global competition for the best and brightest academics. This is not just an issue for universities: increasingly, industry and government are recruiting and deploying research-trained graduates who are able to apply their skills and knowledge across a range of professional settings. This is because innovation, adaptation to new technologies and global communications are vital for almost all industries in the 21st century.

In this context we propose there are three critical dimensions to the researcher career pathway that warrant closer attention and new support initiatives .

1. Improving incentives and support for students undertaking higher degrees by research (masters and doctorates);
2. Improving the quality and relevance of research education and training – in part through the explicit development of graduate capabilities which equip graduates to meet the needs of industry and to adapt to changing employment contexts;
3. Providing linkages between research training and employment pathways, in academia and in industry, to ensure our investment in such training converts to strong and sustainable contributions in both sectors.

[1] Graeme Hugo, `Demographics: the need for renewal', paper presented to CHASS conference on the PhD in the Humanities, Arts and Social Sciences, 7 March 2007.

Context

Research training in universities, and its delivery of high quality masters and doctoral graduates, is key to the on-going development of Australia's capacity to innovate across enterprises, communities and Governments. This has long been the case in the more traditional parts of the Australian economy (eg resource management and manufacturing) and is increasingly also evident in our emerging service, environmental and social development sectors.

The achievement of high quality research training in Australia's universities depends on our sustaining a strong cohort of university research supervisors, on the provision of best practice infrastructure to underpin research training and the vibrant inclusion of research students and their research supervisors in high quality international research networks.

There is no doubt that research training has become more sophisticated and more demanding. In recent years research students have been making higher levels of contributions to the research outputs of the tertiary sector. For example, the following table shows the percentage of RMIT research publications (reported in the Higher Education Research Data Collection) which have research students as co-authors. Thus our research students are at the core of our research productivity. With this background our research graduates become better able to take their place in a research workforce.

Year	Publications with Research Students	Total Publications	Percentage
1999	35	560	6.3 %
2000	60	608	9.9 %
2001	136	829	16.4 %
2002	211	940	22.4 %
2003	389	1,228	31.7 %
2004	449	1,317	34.1 %
2005	521	1,507	34.6 %
2006	526	1,618	32.5 %

In the early 21st Century we are experiencing two strong trends which, if not addressed in the near future, will likely lead to a significant undersupply of research graduates compared to the needs of the Australian economy and the communities it supports:

(i) strong employment growth, supported by strong salary growth, is providing an attractive alternate pathway for many of our best university graduates away from any further focus they may have on research training;
(ii) declining recruitment of research focussed staff into universities has meant a substantial aging of our researcher staff, many of whom will exit the system over the coming decade.

The elements described above strongly support the conclusion that Australia must do more, and quickly, to ensure more of our brightest choose to undertake research training through masters and doctoral studies and are provided with more opportunities to apply their acquired skills in research careers in universities and as well enterprises/communities.

Thus, alongside the recommendations contained in the Australian Technology Network's submission, RMIT recommends the following :

(1) Encourage more students to undertake research training in areas of strategic importance to Australia through substantial increases in the level of living stipend in Australian Post-graduate Awards (APA).

RMIT supports the view that the levels of APA stipends need to be increased across the board. Such increased support needs to be to levels which enable research students to meet basic living costs, thereby countering:

- the short-term attractiveness of higher remuneration in some sectors;
- the necessity for research students to also undertake paid work just to make ends meet, thus reducing the time and energy they can devote to their research.

As part of the ATN submission we recommended that APA's be increased across the board from the current level of ca $20,000 per year to at least $25,000 per year. We also believe there is currently an opportunity to selectively allocate to some APAs even greater levels of increase in order to provide Australia with the timely delivery of more highly trained research graduates into areas of national need.

How might this initiative work – what would it cost ?

- *the Federal Government recently announced funding for an extra ca 5000 APAs per year;*
- *currently APA stipends are allocated at ca $20,000 per student per year;*
- *we propose that these extra places be targeted to areas of national research priority, those where the need for research graduates is strong (eg manufacturing and resources) and where it is difficult to recruit students because of strong employment opportunities;*
- *we also propose that such targeted APAs attract an increase in the stipend of at least $10,000 per year over current levels, and more likely $20,000 per year, to provide the incentives for students not only to choose research training instead of immediate employment but also to engage in research that aligns specifically with national needs. Such increases would ultimately increase the total costs of APAs by $50 or $100m per year respectively. Annual increases would relate to the phased introduction of the new APA s;*
- *the levels of stipend increase and timing of their introduction would need to be determined following further evaluation of appropriate priority research areas.*
- *we also propose that the incentives driven by such stipend increases should not be diluted by removing the current tax-free status of APAs.*

Note : it is also recommended that Government introduce new ***bridging/summer internships*** *for undergraduate students to undertake research project work in an area of national research priority. Such experiences may well encourage more students to contemplate a research higher degree then career as they progress towards completing their undergraduate qualification.*

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(2) Enhance the opportunities for research students to broaden future research-career pathways via a richer research training experience.

Programs to this end might include:

- **short/medium term 'research stages' with internationally leading research teams** in their areas of research focus. Such stages not only provide research students with

opportunities to 'learn from the best in an international context' but also to establish on-going research networks from which a broader set of the Australian research effort can benefit over the longer term because of its involvement in wider networks.

- **research students and their supervisors to undertake internships in Australia and abroad**.: Such internships can provide for much greater innovation in Australian enterprises. The focus here might be on Small-Medium Enterprises (SME) with a demonstrated need to undertake more innovation in order to survive in global markets. Government might well look to a joint-funding model with enterprises. The key benefit of involving the research supervisor as well as student in such internships is the opportunity to establish more sustainable university/enterprise partnerships.

  How might this initiative work – what would it cost ?

  - *opportunities clearly present here for new programs jointly supported by Industry and Government;*
  - *such programs have been operating successfully for many years in the UK for example. There a research student/supervisor may typically spend fractional time based in an SME with Government/the university/the SME sharing people and project costs. In addition Government needs to provide sufficient and on-going funding to sustain the administration/developmental costs of such a program. Actual costs will depend on the detail of the program.*

- **research students to broaden their generic skills around research management**.

  This could be readily achieved by extending the current Commercialisation Training Scheme (supported by the Australian Government) to areas such as project management, ethics and social policy development.
  Research graduates with such enhanced understandings will be better equipped to address many relevant and significant research questions/challenges of the future where solutions, needed by our communities will be discovered at boundaries between technology and community and will require input from across many research disciplines.

  How might this initiative work – what would it cost ?

  - *we recommend that at least 10% of research students should have the opportunity to participate in the CTS and/or an expanded version as described above. This would require increasing the CTS numbers from the current 250 to around 2,500. At $15,000 per student, this could be achieved for approximately $34m. It may be appropriate to stage such growth over say 3 years;*
  - *on-going evaluation would inform the staging profile.*

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(3) Facilitate and bring forward research workforce planning and refreshment in Australian universities.

These might include:

- **tenure-track Post-Doctoral Fellowships** through which new research graduates can be introduced into a university academic career path as part of the host-university's workforce planning. The university will thus get a head start on succession planning in anticipation of the departure of older staff. Promising young researchers are eased into the full spectrum of academic staff requirements in ways that ensure they are well prepared for the demands of such positions. The recently announced Future Fellowships scheme is a welcome step but will not create career paths for these Fellows. The scheme will provide support for four years expecting that Universities will retain the Fellows thereafter. Retention should be mandated, given performance criteria, to ensure our best researchers are offered real opportunities to grow further within our university

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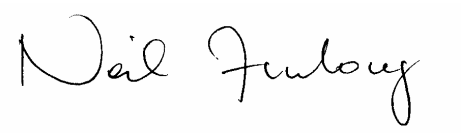
system. Such tenure-track Fellowships could be used for research work internationally as well as within the home Australian university – an option that should be linked to the research strategy/partnerships of the home Australian university.

What would such an initiative cost ?
Significant discussion would be necessary at the institutional level to develop their workforce planning research profile in areas associated with designated institutional research foci. RMIT will be providing more material via our submission to the Future Fellowships Consultation Paper

- **opportunities for mid-career research staff to also undertake 'research refreshment' in industry**. Many Australian universities are accustomed to providing opportunities for researchers to work within other universities from time to time. This engagement often provides the necessary catalyst for researchers to ensure their research can be placed alongside the best internationally. For many of our researchers similar opportunities to connect with industry and/or Government would ensure they can sustain their particular contributions to research training in universities without necessarily moving permanently out of them.

- **opportunities for retiring research staff to maintain engagement with the university/industry on a part-time basis to act as mentor to new staff**. This already occurs in some cases; when it does, the expertise and experience of retiring staff is not lost suddenly and the retiring staff are usually very happy to maintain a reduced level of involvement. If this was accepted, the impact of the generational changes expected in the next decade could be softened.

RMIT is very interested to discuss any of the above recommendations as the House of Representatives Inquiry proceeds.



Prof. Neil Furlong, Pro Vice Chancellor (Research and Innovation)
RMIT University

(E-mail : Neil.Furlong@rmit.edu.au)