

## **ACOLA review of Australia's Research Training System: IRU submission**

The review into Australia's Research Training System is an important opportunity to refresh how Australia supports students undertaking degrees by research. A key focus is to ensure a good alignment of research training with potential for future work in industry, Government and other enterprises, which draw on research capability.

We need to ensure we address well the reality that the research degree can lead both to an academic career and to positions across industry and Government that requires highly capable, thoughtful and imaginative occupants.

Crucial to improvement in this area, as IRU argued in *Industry Driven Research*<sup>1</sup> (IRU, May 2015) is to alter incentives for industry and business to seek out research that can improve their operations and commercial outcomes. For this review incentives to engage with research students should be considered.

The Review sits alongside a suite of Government actions to strengthen research output and its effective use, in particular for commercial outcomes. Of these, the funding structures to support research training are also under consideration by the Watt Review of research policy and funding arrangements.

IRU members have provided detailed submissions outlining their creative approaches to support research students, identifying the directions they now wish to take along with the changes to current arrangements required to allow them to do so.

The IRU response focuses on four main issues:

1. the relationship between the student's research program and their future employment (consultation questions 1-4);
2. how research graduates drive future academia and future economic and social outcomes (consultation questions 5-6);
3. ensuring that the research training system supports the needed outcomes (consultation questions 7-9); and
4. ensuring access and comparable progress for students from all backgrounds (consultation question 10).

The overriding message is the importance of a flexible system that supports research training that lays the basis for future employment both in and out of academic positions, and works well for different demographic groups and diverse geographic locations. There is much positive about current approaches within universities, however aspects of the current arrangements remain designed for the full time student with a focus on a future academic career only. We need to ensure research training supports a wider array of purposes and students.

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<sup>1</sup> <http://www.iru.edu.au/media/54104/industry%20driven%20research%20-%20iru%202015.pdf>

## 1. Relationship of the research program to future employment

The paper poses that research training should focus on “the graduate rather than the research per se”. IRU supports this approach. It emphasises that research training is a launching pad to future actions.

As cited in the discussion paper, in Australia at least half of all research doctoral graduates are not employed in academic positions. Irrespective of whether those 50% of graduates who end up pursuing a non-academic career actually intended this from the outset, Australia’s research training scheme needs to ensure that HDR graduates possess the skills required for a suite of potential career paths.

The skills and experiences that are necessary to be an effective researcher are well set out in the draft Higher Education Standards Framework, which the Government ought to endorse soon. These include solid disciplinary knowledge, the skills to deploy an appropriate methodological approach to research questions and the ability to communicate and evaluate research findings. In addition, there are specific technical skills that will be relevant to different disciplines and career paths of each HDR graduate.

The key is expertise balanced with adaptability. Whether research students have enrolled immediately following undergraduate study or whether they are mature age students returning to further studies, the majority of them are likely to embark on a new career path once and if they complete their research higher degree. Hence, the graduate must possess a suite of skills that would enable not just the first transition but also those that follow in a graduate’s working life. However, we should remain aware that many older students are more focused at pursuing a particular interest, contributing to our knowledge base by doing so, not developing themselves for a new career.

IRU members developed as a group the Highly Effective Researcher Program (HERP) namely a suite of specialized modules of support for research students and early career researchers with professional delivery. Once established, the program was devolved to the universities, with the arrangement now integrated internally and purchased directly by each university.

IRU members participate in a number of commendable models to widen the scope of research training with a focus on future non-academic employment opportunities. Examples are the *Advancing Western Australian Research Education (AWARE)* in which Murdoch participates and the Queensland government’s *PhD Employment Experience Program* (in which Griffith and University of Queensland participated). The latter has now been transformed into the *PhD Industry Experience Program* and extended to all Queensland universities.

## 2. How research graduates drive future academia and future broad economic social outcomes (consultation questions 5-6)

The higher the number of research graduates in Australia, the greater the diversity and strength of Australia’s future workforce. Research graduates also contribute to the richness of Australian culture and our capacity to interact effectively internationally.

Under current arrangements universities support students across a wide range of disciplines to develop their research skills and contribute to the knowledge base. The profile of students reflects the external demand for research where research students can support funded projects balanced with the interests that drive potential students to apply.

This government's intent to "get a bigger bang for our science dollar"<sup>2</sup> goes to the question of how much the research system, including research training should be closely guided to target priorities against allowing it to support a breadth of research.

The government has identified nine national science and research priorities to drive its investment in science and research. The discussion paper puts forward the argument that to align Australia's future research capacity with these priorities, projections of future research workforce needs are needed with areas of deficiency addressed.

Universities decide who they enroll. The Government support system can constrain or direct how funding is used and could try to limit over all enrolments. Currently the Research Training Scheme gives universities full flexibility about how those funds are used to support research training, with the key control being the need for research student completions if a university is to maintain its RTS allocation.

Set against an undergraduate system that encourages potential students to follow their aspirations it is coherent for the following research student framework to give scope again for those with the interests to pursue them, with balancing incentives coming from where research grants and external research investment is directed, ensuring an effective outcome.

The data is yet to be produced but it is highly likely that a significant proportion of research students is researching issues relevant to the priorities, particularly given their focus at science issues with limited role for humanities and social sciences. Further, those students would consume a high proportion of the research training investment due to the higher cost of those areas of research.

The current system is already performing well. The question is which aspects can be improved to maintain and enhance the strength and depth of Australia's future research workforce.

### **3. Ensuring that the research training system supports the needed outcomes (consultation questions 7-9)**

The discussion paper makes the case that while the Australian research system is generally held in high regard by international standards, the breadth of the Australian research training is too narrow. In this section we look at some of the funding and structural issues that may inhibit the best delivery of research training for the full range of eligible applicants.

#### **Supporting all entry pathways equally: Beyond the fourth year Honours programme**

The paper looks at different pathways to undertaking a research doctorate in Australia and overseas questioning the traditional Australian path of a one-year Honours programme following the completion of a three-year bachelor degree.

IRU supports retention of the Honours approach as one viable means to establish the basis for entry to a research degree. IRU is not aware of any evidence that HDR candidates entering through an Honours pathway are sub-optimally prepared for a range of potential employment futures. At the same time, there are challenges relating to the Honours degree including its international

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<sup>2</sup> Statement by the Minister for Industry and Science Ian Macfarlane on 'Science and Innovation Building Australia's Industries of the Future', 17 August 2015. (<http://minister.industry.gov.au/ministers/macfarlane/speeches/ministerial-statement-science-and-innovation-building-australias>)

transportability and lack of breadth. Hence it remains the most common pathway for domestic students but is not so for international candidates.

It is sensible to ensure an approach whereby multiple pathways are available to cater for the variable education and employment background of potential students, covering:

- those who come to research training close in completing an undergraduate degree;
- those coming back to study after significant work experiences, with a range of undergraduate experiences; and
- applicants from around the world, exiting other education systems some similar to Australia's, others not.

The challenge is to ensure that the funding arrangements are effectively neutral for Australians about the entry pathway. Currently the traditional Honours entry route is better supported through the Commonwealth Grant Scheme funding for undergraduate units, with unlimited funded places and student charges capped. This contrasts with postgraduate options, where funded places are contained and fee based places more expensive. Any move away from, or opening up further of options other than the Honours program, needs a neutral funding mechanism that does not encourage one over the other. This requires consideration of:

- a mechanism to convert some part of Honours programs into PG units while retaining funding;
- opportunities to add additional funded PG places tied to preparation for research degrees; and
- aligning the demand driven approach from bachelor to research preparation to research degree. This could be done without opening up demand driven funding of all coursework postgraduate degrees.

There are a number of alternatives that can be probed. In its submission, James Cook University flags a cost neutral option that would facilitate a new Research by Masters as an alternative, optional entry pathway that would align with the Bologna protocol and ensure PhD students commenced their doctoral studies with the required understanding of research methods and theories. Flinders has developed a Graduate Diploma in Research Methods while Griffith offers a Graduate Diploma in Research Studies. The key issue is retaining the flexibility that would allow for a diversity of structures and alternatives.

### **Should the RTS, APAs and IPRS schemes be integrated?**

The current RTS funding model works well in allowing universities to build HDR load and completions independently from the allocation of APAs, balancing students with the strongest academic claims and full time commitment with the broader array of research students.

The discussion paper plays around with the notion of raising the value of support (for research costs and living costs) by concentrating on fewer students. The rationale is that it could address research gaps in certain areas. However this would require evidence that there are significant numbers of potential students in those areas who do not apply but who would apply with a more generous scholarship scheme. It also ignores that APAs are already limited to full time students many of whom are conducting research in the priority areas.

The approach neglects the extent to which the RTS is used in a number of effective models to leverage funding from multiple sources, particularly industry, such that the precise allocation of RTS per student is subsumed within a broader stream of revenue for research projects.

In addition, cutting the overall number of scholarships risks further diminishing numbers from underrepresented groups.

We need to retain a broadly accessible system to support research degrees with living scholarships targeting those most needing support or most crucial to Government aims for strengthening research capability in target areas.

### **Increasing incentives for industry**

An important Term of Reference of this Review is the need for greater opportunity for industry relevant research training.

IRU research has focussed at addressing issues and problems, to find solutions which can be used and which reflect back on the foundation knowledge to deepen it. The value from this research will be strengthened through improved connection with industry.

In *Industry Driven Research* the IRU argues the need to improve opportunities for researchers to work in industry and for career paths that move between university and industry and other settings. This is important for research students. IRU members recognise relevant industry experience when assessing applications for HDR places. To take this further their submissions propose:

- providing incentives to encourage industries, including SMEs to access research higher degree candidates and their research skills even if for a short period of time;
- expanding the 'Researchers in Business' programme thus encouraging industries to employ doctoral graduates;
- creating Graduate school-industry advisory boards at faculty level; and
- providing incentives for industry to fund PhD research and host the candidate on site or collaborative doctoral awards for specific projects.

However much as we can provide researchers and research students willing to work with research users, significant change will only come through stimulus to the demand for research and research skills from end users. Hence IRU continues to argue for suitable incentives for end users to invest in support for research training, on issues relevant to them and through creating opportunities on site. Such incentives would reward those already inclined to see the benefits and lead others to test the value.

## **4. Access and progress for students from all backgrounds (consultation question 10)**

IRU members emphasise the importance of making excellent education available to people from all backgrounds, developing Australia's skill and knowledge base to the fullest extent possible, while giving all individuals the opportunity to participate to the full. This extends to the enrolment of research students.

As shown in their individual submissions IRU members have developed numerous mechanisms to assess whether potential students have the capacity to undertake a research degree and addressed early the need to provide a wide range of support and skill development options to offset any gaps in a person's capabilities.

IRU members have worked together to improve support for research students enrolling from different pathways, pursuing similar range of steps towards this end within each member suited to its students' needs. One such option is the inclusion of assessed coursework in the PhD which allows

universities to gauge the skills' levels of incoming candidates and to offer generic skills training tailored to candidates' needs. This helps universities assess what further support they would need to provide students throughout their candidature to increase their chances of successful completion. Another feature of this model is defined exit pathways.

This approach is particularly useful in improving outcomes for candidates initially less well prepared for research study.

To increase enrolments and completions for students from underrepresented groups, one mechanism to consider is incentives within the funding system that weight for such students, providing both an incentive to support them and resources to provide additional support where needed.

Another way of removing barriers would be for institutions to provide pathway scholarships that enable students to obtain the necessary skills for entry to research higher degree study.

### **The IRU Aboriginal and Torres Strait Islander HDR network**

IRU members educate 19% of Australia's Aboriginal and Torres Strait Islander students. 2.1% of all our students are Aboriginal and Torres Strait Islanders against a national parity target of 2.3%. 1.1% of IRU completions are by Aboriginal and Torres Strait Islander against overall sector achievement of 0.8%. We also employ 17% of Aboriginal and Torres Strait Islanders staff working in Australian universities.

Building on these strengths, the IRU is currently developing a cross-institutional model to address the underrepresentation of Aboriginal and Torres Strait Islander students amongst HDR students proportional to their representation in undergraduate programmes. The aim is to develop a cohort of Aboriginal and Torres Strait Islander HDR students across the IRU to improve outcomes through a supportive network of mentors and resources additional to the supports already in place for students.

### **Key Conclusions**

Australia's research training system is working well with the potential for enhancements to encourage more skills development during doctoral programmes, deeper links with the needs of industry and society, a more holistic PhD experience, improved tailoring for international doctoral candidates and greater international exposure to produce graduates who can adapt to different employment realities both in Australia and overseas.

Universities have and are responding to the need to ensure that research students gain the broad skills and capabilities needed for future employment. It is important that the research training framework encourage this.

Government funding and requirements needs to support universities pursue these outcomes, being wary of directing activity or limiting where research training occurs.

As universities look to improve the involvement of industry and public agencies in research training, incentives for those bodies to become involved would strengthen outcomes.

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