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29 May 2008

Mr Russell Chafer
Committee Secretary
Standing Committee on Industry, Science and Innovation
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Mr Chafer

Inquiry into Research Training and Research Workforce Issues in Australian Universities

I refer to your letter of the 24 April 2008 in which you invite submission to the *Inquiry into Research Training and Research Workforce Issues in Australian Universities* being conducted by the House of Representatives Standing Committee on Industry, Science and Innovation.

We are pleased to have the opportunity to contribute our perspective. On the attached, we have aligned our views to the mains issues given in your letter under Terms of Reference.

We naturally look forward to the outcomes of your review.

Yours sincerely

Professor Graham Baker
Deputy Vice-Chancellor (Scholarship)
University of Southern Queensland

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University of Southern Queensland (USQ) Submission to:
**The Inquiry into Research Training and Research Workforce Issues
in Australian Universities**

1. a) Research training programs are crucial for Australia's competitiveness in science, research and innovation. Higher Degree by Research (HDR) candidates provide and underpin the majority of the research output from Australian Universities. As such, the productivity of research and subsequent exploitation of research is very dependent on HDR students and the adequacy of their training.

HDR students are imbued with appropriate generic research skills that they are able to apply when they enter the workforce. At USQ this occurs via the USQ Research Training Framework and candidates certainly involved in joint publication of research outcomes as learned articles.

A large cohort of HDR candidates is international and many of this cohort seek permanent residency upon completion. This is very positive: it adds to the overall number of skilled researchers in Australia and adds a distinct internationalization to the Australian research competitiveness.

1. b) The current Commonwealth research training schemes (RTS, APA for domestic students, IPRS, Audaid and Endeavour Awards for international students) provide a measure of support for research training, but only cover the basic needs for research support. This requires that universities subsidise the Commonwealth Schemes and to significantly top-up in areas such as engineering where the market forces dictate high graduate commencing salaries.

For international HDR students, three schemes are operating separately and it is very confusing for international HDR students. We would suggest that thought be given to consolidation of the resources and with the production of a single package of international scholarships.

The number of IPRS places is totally inadequate and funded inappropriately. Tripling the number of IPRS plus raising the stipend to \$25,000 would assist. USQ plans to offer 10 USQ-IPRS in 2009 valued at a realistic \$30,000. The fulltime APA stipend is below the poverty line at \$20,000 and should be immediately increased to \$30,000 which is about 75% of the value of average graduate starting salaries (60% for engineering).

Research training at regional universities is further disadvantaged compared with universities in major cities. Students, particular international students, are more willing to take research training programs at metropolitan universities rather than in regional institutions, largely for perceived social and employment reasons. The Commonwealth might consider a scheme particular for a regional university research training program, given the primacy for research in primary industries and mining.

1. c) The existing and diverse training scheme available within Australia largely meet the requirements for research training as universities tend to focus on their strength when recruiting HDRS. This occurs at USQ through its designated Research Centres:

Australian Centre for Sustainable Catchments (ACSC)
Centre of Excellence in Engineered Fibre Composites (CEEFC)
Centre for Research in Transformative Pedagogies (CRTP)
Centre for Rural and Remote Area Health (CRRAH)
Centre for Systems Biology (CSBi)
Computational Engineering & Science Research Centre (CESRC)
National Centre for Engineering in Agriculture (NCEA)
Public Memory Research Centre (PMRC)

The inclusion of “technical” courses with (say) doctorates varies greatly within and across Australian universities and reflects the nature of each university and its own unique approach to research training. At USQ all HDRs are required to undertake some core research training seminars.

However, it must be stated that the current system may fail to provide the appropriate levels of human capital to deliver on innovation for the benefits of the nation. The current model in fact presumes that universities can attract the brightest minds of their generation to undertake research for broader benefits of the country at a salary a fraction of that they can easily obtain in industry (foreshadowed above under competitiveness). This problem is not confined to engineering or the current resources boom. It applies to virtually all disciplines and certainly any profession, but particularly where there are acknowledged skills shortages.

2. a) The decision to undertake a HDR is a function of many variables, however financial support remains the key issue.

While universities provide extensive additional funding to HDRs (about \$2.0m at USQ) they can only build on the foundation provided by the Commonwealth. We refer you to point 1 (b) where it is recommended that stipends be increased to \$30,000 for the sciences and engineering.

2. b) The main factors that determine pursuit of research are quality of facilities, academic staff and stipend. The Commonwealth controls and must increase stipends.
2. c) There is a shortage of highly talented research graduates in Australia to fill the future shortfall in academics in the sciences and engineering. Raw graduates without the experience of post-doctoral training in research and teaching are of little value to the sector. An extension of the Commonwealth Postdoctoral positions, such as via ARC Linkage Projects would assist universities to overcome this predicted shortfall of academics in science and engineering.
2. d) Doctoral graduates from Australian universities appear to be most welcome overseas and this factor contributes to the predicted shortage in skilled academics.

2. e) Historically the relative low Australian dollar has made Australian universities unattractive to researchers from Europe and North America. The current situation improves the situation but volatile exchange rates make the situation tenuous. A focus on Commonwealth funded International schemes would assist.
2. f) USQ is sure that the Commonwealth's own data will show that the Australian academic workforce is in decline and that a severe shortage is predicted in the next decade. Inadequate support for HDRs and Post Doctoral Research Fellows (PDRF) will only worsen the situation.

As relayed under our submission to the Innovation Review, we fully support the Future Fellowships scheme as one which holds promise for succession planning and provision of research career paths for a larger number of talented researchers. We also support the widening access to Commonwealth supported (ARC) stipends to international students. But the significant shortfall in HDR stipends and indeed academic salaries when compared with industry will continue to place serious strain on the sector's ability to attract and retain quality HDR and staff.