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Submission No:

To: The Secretary of the House of Representatives Standing Committee on Industry, Science and Innovation

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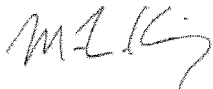
From: Professor Max King
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Re: Inquiry into research training and research workforce issues in Australia

Date: 30 May 2008

Thank you for the opportunity to respond to the review of research training and research workforce issues in Australia. Monash University recognizes the importance of research training in strengthening and maintaining Australia's future generation of researchers and the contributions that students make to our national and knowledge economies. I am consequently pleased to submit the Monash's response to the Standing Committee's Inquiry.

Representatives from Monash University would also be pleased to participate in forums, workshops or other consultations to expand on the issues outlined in this submission and attachment. We would also be pleased to welcome members of the review panel or its representatives to any of our Monash campuses to experience and consider first hand matters relating to research training and workforce. Please feel free to contact me directly to convene any further input.



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Inquiry into Research Training and Research Workforce Issues in Australian Universities

Submission from Monash University

In responding to this review, Monash University would firstly like to refer to the submission prepared on behalf of the Australian Council of Deans and Directors of Graduate Studies (DDOGS) which is appended as Attachment 1. The University recognizes the issues identified in this response and endorses the recommendations contained within it.

Specifically Monash reiterates the importance of research training as it contributes to the global knowledge economy and emphasizes the need for full funding of the true costs of research training through the Research Training Scheme (RTS). We also note the impact of adequate scholarship funding – both domestic and international to attract and retain the best and brightest minds to undertake research degrees and embark on research careers in Australia.

In addition to the points made in the DDOGS submission, Monash tenders the following issues for consideration:

Discipline Specific Challenges

It is clear that there are cohort and discipline specific challenges for research training programs in maintaining and expanding Australia's research workforce. Peter Andrew's work¹ on the enabling disciplines demonstrates the increasing deficit between supply and demand for people with science, engineering and technology qualifications. A Monash literature review² identifies that students in the arts, humanities and social sciences have higher attrition rates and part time students experience particular challenges to completion. The delivery costs of research training are differential but the RTS high and low cost funding bands do not adequately address the variations that occur.

Any improvements to the national research training program should take note of the variations in discipline specific needs, both from delivery and funding perspectives.

Issues Facing the Visual Disciplines

The Contribution that Australian Universities Make

Research training is fundamental to Australia's competitiveness in general, but particularly in emerging disciplines, where research training is building a basis for growth and expansion. This is the case with visual disciplines including art, design and architecture. Professional practice has formed the basis of outcomes in the

¹ Professor Peter Andrews, Queensland Chief Scientist webpage
<http://www.dtrdi.qld.gov.au/dsdweb/v3/>

² Snyder, I. and Forgasz, H. A. Study of Factors Contributing to HDR completions and Non-completions at Monash University, March 2008.

creative arts until their recent incorporation into the university sector, which has enabled their creative potential to be raised to a new conceptual level and their potential as research disciplines to be articulated. This has resulted in a system for ensuring high level creative output in the visual disciplines which contributes to the growing demand for Australian art and design; it facilitates a quality of outcome which can be sustained and further developed, which will also enable a viable academic workforce for the future. Further strengthening research training in the visual disciplines will reinforce areas already recognised for their creativity and innovation; to build research in the creative arts is to directly build innovation because of the integral relationship between research and innovation in the creative disciplines.

The major weakness in achieving the extensive potential of research training in the visual disciplines is the inadequate academic infrastructure to support it. These disciplines are new arrivals on the research scene and as such the needs and parameters of support necessary for their advancement are not established. Issues of cost of training, space and equipment requirements have been implemented in an ad hoc way without a systematic analysis of the requirements to maximise the output of this area. Further, the academic staffing to support a quality training program has not been planned, but has evolved in a similarly ad hoc manner. There is immense potential for the visual sector to contribute to economic and cultural development, but it is necessary to review the resource implications and provide infrastructure and funding to build the sector and future staffing within it. Research training in the visual disciplines provides a vast opportunity for the expansion of new industries by taking established activities to a higher level of achievement and establishing new markets as a result.

The Challenges Australian Universities Face in Training Recruiting and Retaining High Quality Research Graduates and Staff

Research training in the visual disciplines will be an important option as it becomes increasingly apparent that it offers the standard pathway for achieving high quality outputs in the visual areas. This will exacerbate the shortage of high quality academics able to supervise PhD students. Planning for development in the disciplines will require scholarships to attract and keep high quality candidates to undertake academic careers; there is demand for research, but opportunities for careers in academic institutions is limited, due to the lack of infrastructure and planning. Research opportunities overseas are growing in the visual area, with increased international demand for Australian visual products. As research training becomes further entrenched as the road to the production of high quality and innovative visual outputs, demand for PhDs will increase from local student markets and, as an educational export, for international student markets. Further, Australia is at the forefront of world developments in visual research training, with its studio based PhD programs; this form of research has considerable potential internationally and if appropriately resourced, could form the prototype for research and innovation in the visual area.

Funding Levels

The strong local and international evidence that RTS funding falls well short of the full cost per student of delivering Higher Degree by Research (HDR) programs makes it clear that the national need to further increase HDR enrolments will place even greater fiscal pressure on universities. Cost vs revenue variances at Monash range from \$5700 to over \$20,000 per unit of equivalent full-time student load in different disciplines and a Higher Education Funding Council of England (HEFCE) report produced similar cost figures.

Monash University confirms the DDOGS assertions of the pressing need to expand research training output in Australia and applauds the recent announcement of an increase in the number of APA scholarships. However, assuming there will be an increase in HDR intake in line with the expansion of the APA scholarships, the *additional* costs to our institution to support the extra 438 students will be somewhere between \$2,500,000 and \$8,700,000 per annum. This is unsustainable. The need to review the funding levels provided by the RTS is paramount to implementing the growth required to Australia's research training capabilities.

Monash is truly an international university with two overseas campuses (Malaysia and South Africa). We would like to provide our HDR students with a greater international experience but are struggling with the costs of travel support. Given Australia's relative remoteness, we could become a less attractive destination for PhD students compared to the US, Canada or Europe, if we don't pay proper attention to our students' travel needs.

Flexibility in Government Support

As noted in the DDoGS submission there are a number of discipline areas where it is particularly difficult to recruit full-time PhD students in sufficient numbers to cover Australia's future workforce needs. Many of these areas are able to attract part-time students in their late 30s and early 40s with families and mortgages to support. For them, the APA stipend of approximately \$20,000 per annum is too low. Monash would like to suggest a special scholarship that would allow such candidates to switch from being part-time without scholarship to full-time for up to two years with scholarship support of \$35,000 per annum. These special scholarships could be reserved for particular areas of shortage where it is important we fast-track qualified people into the workforce. They might also receive a completion bonus. The government should also consider a waiver for any fringe benefit tax incurred by businesses or institutions that employ staff undertaking research degrees.

Research Training Beyond the HDR

The DDOGS submission recognizes that research higher degree programs, whilst critical, are only one part of the suite of research training opportunities available. The current framework of support, mentorship and skills training programs available to early career researchers (ECRs) both in academe and industry, is fragmented and, in the main, inadequate.

Postdoctoral fellowships are limited and not well enough paid. There is a lack of progression in the programs available to support the continued training (beyond the PhD) and recruitment and retention of early career researchers in Australia. Monash welcomes the announcement of the four-year investment of \$326.2 million to be directed to funding Future Fellowships, designed to attract and retain 1,000 talented mid-career researchers from Australia and abroad. However, only \$11 million of this funding is accessible in the 2008-09 financial year and this is only one plank in the comprehensive program that is needed.

We encourage the panel to consider the model established in the current NH&MRC suite of funding programs to support both emerging and established researchers. The progression from scholarships, through training (postdoctoral) fellowships to NCIS, New Investigator Fellowship Grants and Australia Awards is also supported by programs to enable travel and international collaboration. This comprehensive model has underpinned the success of research in the medical sciences and should inform this review of research workforce support programs.

Monash University's Workforce Challenge

Table 1: Headcount of Research and Teaching & Research Staff by Age Group (Years) as at 9 May, 2008

<i>Age Group in Years</i>	<i>Research</i>	<i>Teaching & Research</i>	<i>Total</i>	<i>Percentage Research</i>	<i>Percentage Teaching & Research</i>	<i>Percentage Total</i>
<25	71	4	75	4.8	0.2	2.2
25-29	249	68	317	16.9	3.4	9.2
30-34	366	175	541	24.9	8.9	15.7
35-39	251	234	485	17.1	11.8	14.1
40-44	196	298	494	13.3	15.1	14.3
45-49	121	325	446	8.2	16.4	12.9
50-54	101	339	440	6.9	17.2	12.8
55-59	60	288	348	4.1	14.6	10.1
60-64	34	182	216	2.3	9.2	6.3
65 plus	21	63	84	1.4	3.2	2.4
Grand Total	1470	1976	3446	100.0	100.0	100.0

Note 1. Report run 16 May, 2008. 2. Does not include research support staff.

Table 1 shows the headcount of Research Only and Teaching and Research Staff by age group for Monash University as at the 9th May 2008. The second column headed Research is the count of research only staff who, with a small number of exceptions, are paid from soft money – typically research grant money. The third column headed Teaching and Research gives the count for the more permanent academic staff at Monash who are involved in teaching, research student supervision and research.

The University is very concerned that nearly half (44.2%) of its Teaching and Research workforce is aged 50 and above while just over a quarter (27%) is 55 and above. Approximately 50% of all our professors are 55 and above. We recognise it is

going to be a very difficult transition over the next decade as about half our senior academic staff retire and need to be replaced when nearly all other Australian universities are also looking to replace a large proportion of their senior staff. We hope the Government recognises this looming problem and can help universities plan for a smooth transition.