



Submission No: 71

The Hon Peter Garrett AM MP

Minister for the Environment, Heritage and the Arts

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

Dear Mr Chafer

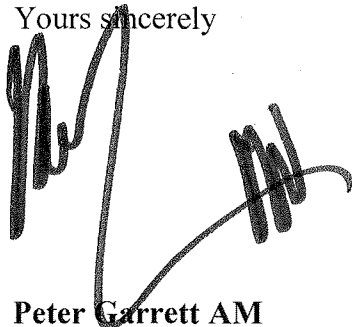
Following an invitation from Ms Maria Vamakinou, Chair of the House of Representatives Standing Committee on Industry, Science and Innovation, I am providing the Committee with my submission to the inquiry into research in Australian universities.

The development of high quality research will be an important factor as we address the environmental challenges facing Australia in the twenty-first century, and I therefore share the Committee's interest in the ability of Australian universities to recruit, train and retain quality research staff. I trust you will find my submission informative.

If you require any further assistance, the contact officer in my Department is Dr Sally Troy, Assistant Secretary, Environment Research and Information Branch. She can be contacted on (02) 6274 2210.

Thank you for the opportunity to contribute to this important inquiry. I look forward to reviewing the outcomes.

Yours sincerely



Peter Garrett AM

SUBMISSION TO THE INQUIRY INTO RESEARCH IN AUSTRALIAN UNIVERSITIES

MINISTER OF THE ENVIRONMENT, HERITAGE AND THE ARTS

Overview of the Portfolio's interest in research at Australian Universities

Under the Administrative Arrangements Order of 25 January 2008, the Department of the Environment, Water, Heritage and the Arts has responsibility for 'environmental research'. I have a direct interest in the Standing Committee's inquiry because universities make a major contribution to Australia's environmental research effort. Universities undertake much of Australia's environmental research, as well as training of skilled graduates for the workforce.

My Department has responsibilities, with associated issues, that fall within both of the Standing Committee's Terms of Reference: it funds some training in Australian universities; and is a user of research and an employer of university-trained researchers. The following commentary addresses my Department's interests under the principal headings of the Standing Committee's Terms of Reference.

1. The contribution that Australian universities make to research in Australia

University research is a major source of the knowledge and information needed to support quality evidence-based environmental policy development and decision-making. It is central to discovery, innovation and new ideas – the pathways to solutions to Australia's future environmental challenges.

Universities are also essential to training graduates with the skills, knowledge and experience needed to participate and lead Australia's environmental research, as well as graduates who are capable of applying research to support environmental policy and programs.

The Department has a strong connection with, and investment in many of Australia's universities through the Commonwealth Environment Research Facilities (CERF) program, its major environmental research program. Universities contribute to CERF by leading and hosting CERF research or by collaborating and forming partnerships to support the research. Eighteen of the 22 organisations that are hosting CERF research are Australian universities.

CERF is a \$100 million environmental research program to support world-class, public-good environmental research in Australian research institutions. The CERF program has two main components: the \$40 million Marine and Tropical Sciences Research Facility (MTSRF) for research relating to the Great Barrier Reef, tropical rainforests and Torres Strait; and the \$60 million nation-wide research component comprising CERF Research Hubs, CERF Fellowships and CERF Significant Projects.

CERF research engages with end-users, promotes collaboration amongst researchers and provides results accessible to government, industry and the community. There is considerable co-investment in the CERF program.

One of the key criteria for CERF funding is enhancing Australia's environmental research capacity, including the provision of high quality research training and skills development through, for example, the provision of postgraduate training.

MTSRF

The universities included in MTSRF are James Cook University, Griffith University and the University of Queensland. In addition to extensive collaborative, training and career opportunities for researchers at all stages of their careers, MTSRF recently funded 10 additional PhDs to support environmental research in the region.

Research Hubs

CERF Research Hubs draw upon expertise across a range of disciplines and research institutions, and each was chosen, amongst other things, for its contribution to improving Australia's research capacity through its graduate, post-graduate, post-doctorate and other early-career programs. The number of universities across Australia involved in CERF Research Hubs is considerable (see Attachment A).

Fellowships and Significant Projects

CERF also funds fellowships and projects for world-class researchers to work within Australian institutions. Currently, all but one of these is within a university. This provides an opportunity for acknowledged world-class researchers, such as Professor Gene Likens, of the Institute of Ecosystems Studies in New York, to visit Australia and work alongside Australian environmental researchers and students, and share their expertise.

2. The challenges Australian universities face in training, recruiting and retaining high quality research graduates and staff

A range of programs and policy areas within my Department rely on research flowing from environmental scientists, economists and other specialists trained at universities.

Universities face major challenges in training, recruiting and retaining high quality research graduates and staff. This is a reality of the labour market in Australia at present. Organisations that employ university-trained professionals compete with each other and must learn to operate within the constraints of a tight labour market.

Issues

My Department has identified a number of important issues faced by program and policy managers relating to research graduates, including the following:

- The Bureau of Meteorology employs university-trained staff and undertakes considerable in-house training due in part to the inability of the tertiary sector to meet the Bureau's training needs. Issues faced by the Bureau are given in more detail in Attachment B.
- The problems highlighted in this inquiry are particularly acute in the field of taxonomy, the science of naming, describing and identifying species, as the number of professional Australian taxonomists is at a critically low level. Australia's biodiversity is significant and unique, and the ability to correctly identify species is a

vital basic skill needed for important programs such as quarantine and customs controls, weed identification and biological surveys, as well as to underpin our understanding of how ecosystems function. Universities have a key role to play in increasing Australia's taxonomic capacity. More information on this issue is at [Attachment C](#).

- In the CERF program, there have often been insufficient qualified students to fill PhD vacancies, resulting in strong competition to attract students. This shortage is widespread through the scientific field and was noted by the Productivity Commission Report on Science and Innovation (March 2007).
- The Australian Antarctic Division has noted that there is a shortage of researchers with numerical and statistical experience.
- The provision of effective support to increase the participation of Indigenous people in study and research positions needs a higher priority. It should also be noted that best practices should be in place to ensure non-Indigenous students and researchers are always appropriately trained in cross-cultural research, and that the value of Indigenous knowledge systems is recognised.
- Generally, the public sector can have difficulties in attracting suitably qualified research staff in some fields, and I appreciate that this may be the same for universities and other research institutions. These sectors have limited capacity to follow market salary rates for their staff in professional areas which are being driven by the current mining boom and attracts many specialised technicians to highly paid jobs in industry.

In closing, I draw the Standing Committee's attention to the fact that the review of the national innovation system announced by my colleague Senator the Hon Kim Carr, Minister for Innovation, Industry, Science and Research, and currently being undertaken, may raise issues that set important context for the deliberations of this Standing Committee. My Department lodged a submission for this review which can be found on the review's website:

<http://www.innovation.gov.au/innovationreview/Pages/home.aspx>.