

29 January 2010

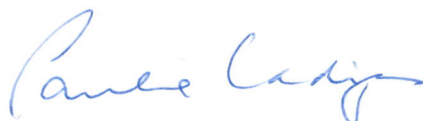
Committee Secretary
Standing Committee on Industry, Science and Innovation
House of Representatives
PO Box 6021
Parliament House
CANBERRA ACT 2600

Dear Committee Secretary,

Submission by the Faculty of Science, The University of Melbourne

In response to the call for submissions (media release issued on 27 November 2009), the Faculty of Science at the University of Melbourne is pleased to submit the following to the House of Representatives Industry, Science and Innovation Committee's inquiry into Australia's international research engagement.

Yours sincerely,



Professor Pauline Ladiges
Acting Dean, Faculty of Science
The University of Melbourne

House of Representatives Standing Committee on Industry, Science and Innovation

Inquiry into Australia's international research collaborations

Submission from the Faculty of Science, The University of Melbourne

The following submission addresses the Term of Reference of the inquiry into Australia's international research collaboration and was created after consultation with the departments and schools within the Faculty of Science at the University of Melbourne.

1. The nature and extent of existing international research collaborations.

The nature of international research collaborations includes activities such as joint research projects, joint publications and patents, and joint supervision of research students. Collaborations often also involve exchange visits of staff and/or research students between the Australian and overseas institution. The length of time of these visits may range from a few days to several months.

Collaborations generally arise through direct personal contact between the researchers. They include less formal collaborations where there is not yet joint research undertaken but there is information sharing and an enhanced awareness of the global research environment. These may be initiated during a postdoctoral research appointment in an overseas institution.

Most international collaborations are performed with colleagues, and consequently do not tend to be particularly well funded. Rather, they tend to be funded from existing projects in an attempt to improve the overall quality and success of the project. The experience of researchers in the Faculty is that it is not particularly easy to secure funding for overseas collaborations (see also 4 below).

In relation to the extent of existing collaborations, researchers in the Faculty of Science currently have over 800 international research collaborations with colleagues in more than 440 universities and organisations across more than 53 countries. The largest proportion of collaborations are with researchers in the United States of America (32%) followed by the United Kingdom (11%), Germany (7%), Canada (7%) and France (6%).

2. The benefits to Australia from engaging in international research collaborations.

There are a number of benefits, including:

(i) Access to expertise and infrastructure not available in Australia: Arguably the key benefit is that Australian scientists are able to work with world-leading researchers and can gain access to laboratory infrastructure that is too expensive for a single country of the size of Australia (eg CERN, National Laboratories in the USA, Japan or Europe). This has huge advantages for Australia, especially given its geographical isolation from Europe and the USA.

(ii) Financial: Some collaborations are supported by competitive funding from overseas agencies with funds that flow directly to Australian researchers.

(iii) Opportunities to showcase the ingenuity of Australian researchers: Collaborations provide showcases for the quality of Australian science, which in return will hopefully lead to more overseas funding coming into the country to support collaborative works. They are also seen favourably by national competitive granting agencies.

(iv) Training opportunities for students. International collaborations provide outstanding opportunities for Australian PhD students and early career researchers to receive training in the overseas laboratories and institutions. They also provide opportunities for undergraduate student exchange facilitated by the adoption of the Bologna model of tertiary education in some Australian universities.

3. The key drivers of international research collaboration at the government, institutional and researcher levels.

At the government level; it allows shared national priority areas to be addressed. The sharing of expertise through international collaboration allows larger and more important problems to be addressed than can be addressed by the partners individually.

For the institution; it generates more prestige and allows access to overseas expertise and facilities and the possibility of exchange visits of staff and students.

At the researcher level; one is able to increase the input, diversity of expertise and quality of people working on a project.

4. The impediments faced by Australian researchers when initiating and participating in international research collaborations and practical measures for addressing these.

A key impediment to international collaboration is the way in which funding is distributed. One factor is the difficulty of obtaining financial support for the Australian component of the research program when this cannot be supported from the overseas agency.

With very few exceptions, it is impossible for an investigator in Australia and in an overseas country to simultaneously lodge applications with their respective national funding bodies that would fund both research groups so that they could work collaboratively. This usually means that one research group will have funding and the other will not creating a lop-sided research collaboration.

One means of addressing this issue would be to reinstate the former DIISR International Science Linkages program, or a simplified, enhanced scheme of that type.

One of the problems with the international linkage grants – for example with French researchers, is that the international money obviously requires Australian support, but the Australian support for such projects is leveraged again – it in turn requires industry or other

support within Australia. Thus projects that might be of great potential benefit to Australia, but which are not already the subject of industry supported work in Australia, have no chance of support. The problem here is double leverage. This gives researchers a catch-22 situation.

A related impediment is access to funds to travel to set up collaborations. A simple travel grant scheme designed for different career levels would be highly desirable. It would be appropriate to fund up to one month's leave for a researcher to travel and set up key collaborations. Currently, most setting up is done at conferences and over the internet. Up to a month at another institution would really facilitate better collaborations and develop longer lasting working relationships.

Finally, there are some difficulties arising from visa arrangements - especially for those collaborators visiting for lengthy periods of time, but funded by their home institutions.

5. Principles and strategies for supporting international research engagement.

An awareness campaign for existing opportunities would be beneficial. Most university Research Offices are very good at handling the well known ARC and NHMRC schemes, but not so good at international opportunities. Administrative and reporting requirements of international funding schemes can be complex and unfamiliar.

A successful peer-reviewed, competitive proposal funded by an overseas agency should be eligible for matching support from an Australian agency without significant additional review.

A postdoctoral scheme for sending new PhD graduates overseas for one to two years would be very useful. The NHMRC offers training schemes with an overseas component for recent Australian PhD graduates working in medical and health-related research. The schemes fund two years work overseas followed by two years in an Australian institution. A similar scheme could be offered by the ARC for recent PhD graduates in non-medical research areas.

There is a potential role for more international postgraduate scholarships. There are many talented international students that cannot work in Australia because there is no support, yet these students provide wonderful opportunities for collaboration either with their MSc/PhD supervisors, or as the students return home.