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Submission

on

International Research Collaboration

to the

House of Representatives Standing Committee

on

Industry, Science and Innovation

by

Australian Catholic University

1. The Nature and Extent of Existing International Research Collaborations

The University has consolidated its major research focus into six (6) University Priority Research Centres and these have extensive International Research Collaborations (IRC; Appendix 1). While each IRC has the potential to be developed to provide substantial research revenue, to date this promise has been unfulfilled with IRC-sourced income representing only 2.4% of 2008 income reported by the University to ERA.

Growth of IRC to optimum productivity requires discussion and negotiations over distance and international travel. Such involvement is usually prolonged, time consuming and costly because in addition to the usual considerations of joint-research nationally, differences in cultural, political, legal, financial and ethical issues have to be understood and mutually resolved (see below). Although currently under-developed streams, with support and resources these IRC could be sources of research productivity, achievement and revenue.

2. The benefits to Australia from engaging in International Research Collaborations (IRC)

Optimization of research productivity is a function of critical mass and attaining this in personnel, facilities and infrastructure is challenging for Australia, a country with relatively small resources and population. While there are substantial differences in resources, knowledge, culture, training, creativity and infrastructure between countries, careful selection of IRC can provide physical and human resources to supplement the Australian resources at little cost. Differences between countries, while sometimes challenging, provide a stimulus to enhanced clarification of concepts and research goals[1]. Increased heterogeneity of the research team (ie increased variability of cultural background, discipline, and training) stimulates refinement of creative concepts and greater sharing of idea. Homogenous teams have discussions which were more harmonious, but heterogeneous teams generate more discoveries[1]. Thus cross-cultural integration and interdisciplinary inclusion produces tangible benefits to research productivity and at a reduced cost per unit data.

Australia cannot afford to attempt to be a leader in all areas of research. Through IRC, Australia will at a favourable cost/benefit ration, be part of an increased number of projects, will maintain international status and will ensure a national respository of knowledge, skills and expertise in these fields.

[1] **What is Research Collaboration ?** J. Katz and B. Martin. Science Policy and Research Evaluation Group Science Policy Research Unit University of Sussex Falmer, Brighton BN1 9RF, UK

3. The Key Drivers of International Research Collaboration at the Government, Institutional and Researcher Levels

The main drivers of IRC are[2]

- The globalization of information transfer
- The globalisation of education, research and development
- Maximization of national competitiveness in pursuit of research excellence
- Improvement of quality, scope and critical mass of knowledge
- Resolution of national and international societal challenges
- Creation of cooperative and stable diplomatic relationships
- Support of less developed countries
- National benefits from research knowledge (financial and other benefits through applied knowledge)
- Development of cross-national exchanges including personnel and products (e.g. trade)

3.1 IRC and Government

The Australian Government is the largest investor of research and IRC is one way to ensure efficiency. IRC ensures that Australia has access to research enterprises some of which are more cost efficient and more intellectually advanced than national teams. While the current focus may be on industrial nations, the rapid transfer of information and personnel internationally will mean that some less well developed nations will be leaders in niche areas of research in the future. Dual goals of increased efficiency and enhanced effectiveness of research could be achieved when programmatic co-operation between countries is supported by government policy, funding and procedures.

3.2 IRC and the Institution

IRC benefits institutions by exposing researchers to international techniques, ideas and funding which optimize research productivity. The existence of research common to several nations is evidenced by the "brain drain syndrome" - that is an imbalance of transfer of highly skilled academic personnel to a country with superior and/or a more appealing research environment. To most personnel, having the flexibility to access this environment research without leaving their home country would be preferable. IRC provides this.

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[2] **Drivers of International collaboration in research** Final Report European Commission, Directorate-General for Research Communication Unit, B-1049 Brussels, Belgium

3.3 IRC and the Researcher

Academic researchers are aware that international experience and IRC can increase their research productivity and enhance their promotion[2] (below).

- Enhanced quality of science
    - cross-fertilization
    - competition,
    - combining complementary knowledge
    - access to world class researchers, facilities and groups
- Resolution of specific scientific problems with input from international teams
- Increased scope and of research
    - combining complementary knowledge
    - pooling funding and human resources
    - sharing risks
    - increasing computational power
- Greater access to scarce human resources for research
- Increased (international) productivity and visibility of research
- Contribution to building institutional capacity in research organisations

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

Academic researchers are personnel driven by priorities not always aligned with popular norms. Their ambitions include involvement in research that is excellent and meaningful even if it comes at some personal cost. They aspire to association with the best researchers in their field and acknowledge that contact with this critical group now requires international connections. Their willingness to embrace IRS is limited by the time and cost of establishing, de novo, pathways for contact, agreed procedures for responsibility of input and ownership of outcomes and the cost of travel. The recent *International Collaboration Awards,* available to Chief Investigators, Fellows, and Partner Investigators for a minimum of 1 month to a maximum of 6 months to live overseas ($40,000 for travel and subsistence costs) are an excellent beginning to expanding IRC. However, IRC needs to be seen as a national priority and funded accordingly.

To address these constraints, funding should be provided to

i) Establish a Government Department to support IRC

ii) This Department would establish procedures, polices and funding to facilitate the development of IRC. These would include identification of opportunities for IRC and dissemination of this information to academic and other organizations; off-shore assistance to develop linkages; and legal, cultural, and political advice, training and other assistance to expedite development of agreements.

5. Principles and strategies for supporting international research and engagement

IRC could be made "...*more effective and efficient through greater programme co-ordination between countries (and with international organisations and foundations) and through pooling of effort*[3]..."

This level of international co-operation could only be achieved through a government Office/Department focused on IRC. The IRC Office would provide an integrated, transparent and timely service to facilitate IRC development at all levels including initial contact, negotiations, and travel (including out-going visas, (incoming) short-term, medium term and permanent immigration). Policy development at this level needs to remove factors which could be impediments to researchers travel overseas for an extended time to meet IRC demands. These factors include job security, maintenance of employment and pension benefits, taxation implications, and (host country) cost of living expenses.

[3] **Drivers of International collaboration in research** Final Report European Commission Directorate-General for Research Communication Unit, B-1049 Brussels, Belgium

Appendix 1: University Priority Research Centres and links to international research organizations

- **the Centre for Early Christian Studies**:
  - Okayama State University
  - Hoseo University
  - Presbyterian College and Baesuk University, Seoul
  - Augustinianum, Rome
  - Boston College
  - Università degli Studi die Firenze
  - Österreichische Akademie der Wissenschaften
  - University of Joensuu
  - University of St Mary of the Lake, Mundelein
  - University of Nottingham
  - Catholic University of America

- **National Centre for Clinical Outcomes Research**:
  - Shanghai Institute of Health Sciences
  - Peking University
  - Capital Medical University, Beijing
  - University of Kentucky
  - Ottawa Hospital Research Institute
  - University of Pennsylvania
  - University of Leicester

- **Centre for Authentic and Creative Leadership**:
  - Washington State University
  - Boston College
  - Temple University
  - National University of Ireland, Maynooth

- **Mathematics Teaching and Learning Research Centre:**
  - Nationellt Centrum för Matematikutbildning, Goteborg (Sweden)
  - Plymouth State University, New Hampshire, USA
  - University of Oldenburg (Germany),
  - Kassel University (Germany)
  - Khon Kaen University (Thailand)

- **Institute of Child Protections Studies:**
  - University of Gloucestershire
  - University of St Thomas, Minneapolis St Paul

- **Quality of Life and Social Justice Research Centre**:
  - University of Wisconsin, Madison
  - Aberdeen University
  - Dresden University
  - University of Zurich
  - Washington University, St Louis
  - Osaka University
  - University College, Oxford.