

# Research dissemination

## Submission to the inquiry into research training and research workforce issues in Australian universities

Author: Professor Arthur Sale

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### **Executive summary**

*This submission makes four recommendations. All have to do with the training of GR students in current and developing practices of research (scholarly) dissemination, in which most supervisors are inexperienced, having themselves been trained in the Gutenberg era of print dominance, not the Internet era. Under these circumstances, the apprenticeship model of research training based on a student-supervisor relation breaks down. Failure to address the problem will hamper Australia's level of innovation, and continue to reduce the career prospects of research graduates.*

*The recommendations are carefully worded and succinct to make it clear what is required of universities and students, while leaving consequential behavior by both to follow on the recommendations.*

*The submission is directed specifically to four points in the terms of reference:*

- 1b The effectiveness of current Commonwealth training schemes
  - 1c The adequacy of current research training schemes to support Australia's future needs...
  - 2c Opportunities for career advancement for research graduates and staff
  - 2d Factors determining pursuit of research opportunities overseas
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### **Contact details**

Professor Arthur Sale  
School of Computing & Information Systems  
Locked Bag 100  
University of Tasmania  
HOBART TAS 7001

Email: [Arthur.Sale@utas.edu.au](mailto:Arthur.Sale@utas.edu.au)

Mobile: 04 1947 1331

Fixed phone: 03 6247 1331

## 1 Introduction

This submission is addressed to a single topic – the training of research graduates in modern scholarly dissemination practices, and their active participation in these practices during and at the end of training.

Scholarly dissemination is currently going through a major revolution caused by the Internet, and the training of research graduates has not yet caught up with even the changes, principally because the supervisors and the universities (corporately) have not yet fully assimilated the changes. This is not surprising as the revolution only commenced ten years ago and is not yet complete. New research graduates, however, ought to be prepared for the future they will face as researchers, not the context which their supervisors faced.

## 2 Thesis deposit

### 2.1 Background

The Australian Government has funded a distributed gateway to individual university thesis repositories – the *Australasian Digital Thesis Program (ADT)* <http://adt.caul.edu.au/>. Of the Australian universities, 32 contribute graduate research theses to ADT, and the program has been extended to New Zealand as well (7 of 8 universities and hence the ‘Australasian’ title). The program is to be applauded and has done a great job, as far as it can.

There are two problems with this program:

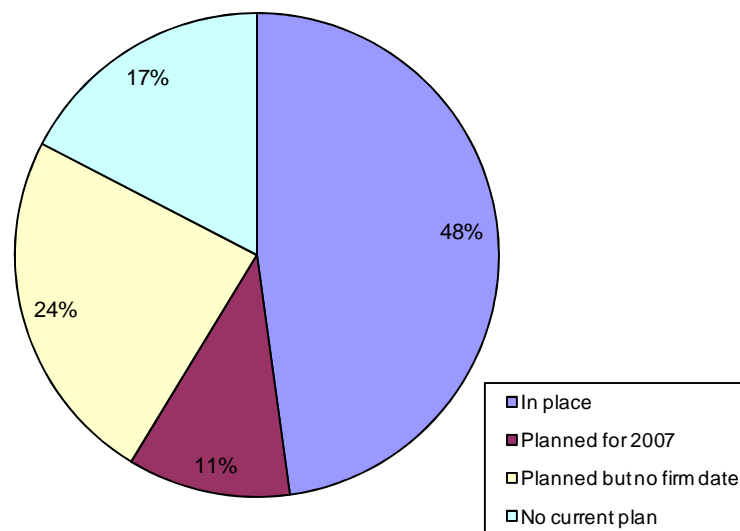
- Participation by Australian universities is voluntary. Some universities are not active participants in the ADT program. They therefore deprive *all* their research graduates of an opportunity to make their work accessible to others, and worse still deprive them of even knowing that such an opportunity exists. Needless to say the Australian public and public enterprise is also deprived of access to research it has funded.
- While 22 Australian universities have *required* their graduates to deposit their theses in the University repository in an electronic format (and thence disseminated by ADT), there are still a sizable number who leave it to the graduate’s discretion. Not surprisingly, deposit rates are extremely low in these universities, around 10% of all current theses produced. Again, the Australian public and research entrepreneurs are deprived of the benefit of visibility of the innovative research Australia has funded. According to the most recent survey by the Council of Australian University Librarians (CAUL), the universities which have not announced any form of mandatory thesis deposit are:

Australian National University  
Charles Darwin University  
Charles Sturt University  
Deakin University  
Edith Cowan University  
Flinders University

La Trobe University  
Macquarie University  
Southern Cross University  
University of Ballarat  
University of Newcastle  
University of New England  
University of South Australia  
University of Sydney  
University of Technology Sydney  
University of Western Sydney

## 2.2 Action

Given that ample time has elapsed since 1998 (the year ADT commenced operation) for voluntary compliance by universities, it is now incumbent on the Commonwealth Government to *require* that graduates deposit their theses in electronic format with their universities. Faced with deposit of electronic theses in their hands, even the procrastinating universities should find a way of participating in the ADT program, even if through a consortial arrangement for very small institutions.



*Current information on mandatory policies from CAUL Survey*

## 2.3 Benefits and disadvantages

### Benefits

- All Australian graduates will realize the value of their research through public exposure, will receive enquiries, and will be encouraged in their careers as researchers.
- The future careers of Australian research graduates will be enhanced, as well as their opportunities to broaden their research training through international post-doc experiences.

- Australian publicly funded research will be searchable on the Internet, and potentially accessible to Australian private enterprise and the Australian public as well as international researchers.

### **Disadvantages**

- Graduates will have to lodge electronic copies of their theses, which is a minor imposition on them since that is how they were prepared. In many cases, universities which require electronic copies have consequentially reduced the requirement for multiple paper copies which are no longer needed to a single archival copy, which translates to a net cost-saving to the graduate. (In time, paper copies may not be required at all.)
- Universities without an ADT thesis repository will be encouraged to make arrangements with one which has, or to establish their own at minor cost.

## **2.4 Recommendation**

- 1 *The APA scholarship guidelines should be amended to require each graduand to deposit an electronic copy of his or her final thesis with the degree-granting university before being awarded the degree.*

In explanation, more is not probably needed. The compulsory deposit of an electronic copy makes it clear what the Commonwealth's intention is. The recalcitrant universities should join ADT and establish a mechanism to deposit their theses.

## **3 Modern research dissemination**

### **3.1 Background**

In the last decade the activity of research dissemination has undergone a profound transformation, which is still in progress. The previous paradigm of research being published in a journal accessible by subscription only, and read by all interested researchers who are assumed to have subscriptions, is no longer valid. The dominant publishing business model is increasingly under stress, and is changing.

Unfortunately most university researchers, and therefore most research supervisors, have not woken up to this change, and continue assuming that it still holds and will hold for perpetuity. Consequentially, graduate research students are not being prepared adequately for a life in the Internet era of easy communication of scientific results, because their supervisors aren't.

### **3.2 Action**

Research candidates should be trained in scholarly publication, regardless of their discipline, though the details may be different. That this does not take place generally, except through the apprenticeship method of research training, is a national scandal. Worse, the 'masters of the craft' are themselves largely ignorant of modern dissemination trends, or behind the state of the art, and consequentially transmit their deficient knowledge to their students. Australia needs to require universities to explicitly train students in scholarly dissemination practices, including the impact of the Internet and the consequences and limitations of copyright.

Secondly, Australia should be requiring students to practice what they will be taught. Each research student should be *required* to deposit *all* his or her journal or conference publications in their university research repository. Where such a repository does not yet exist, the university should take steps to make one available. This will instil in the research students the practice of depositing their research as a routine part of doing research, and they will carry this into later life as a researcher. In principle, this is only a small step away from training research students to submit their work to journals and/or conferences.

I note that it is not essential to make the research ‘open access’ (in other words ‘free to all to read’) because this is presently often tied up with restrictive publisher agreements. Without extending this submission, suffice it to say that:

- where possible the research should be made open access, but it must always be deposited, and
- exposing the metadata of the research on the Internet will in any case create the circumstances for interested researchers to discover the research and to request a copy under ‘fair use’.

### **3.3 Benefits and disadvantages**

#### **Benefits**

- Research students will learn about the information revolution taking place in the scholarly publication industry, and adapt their dissemination practices to maximize their impact.
- Research students will become used to using open access facilities to expose their research to others.

#### **Disadvantages**

- Universities will have to develop training in scholarly communication, up to date with current practice.
- Students will have to learn how to upload their publications to digital repositories, to deal with online journal access systems, and to spend the short time (5-10 minutes) required.

### **3.4 Recommendations**

- 2 *The APA scholarship guidelines should be revised to require research students to deposit (if not previously deposited by a co-author) any journal or conference publication to which they are a co-author in the university’s digital research repository if it has one; otherwise they should supply an electronic copy of the publication to the university’s Research Office.*
- 3 *Universities are encouraged to establish digital research repositories in which all the published journal and conference works relating to their research may be deposited.*
- 4 *Universities should establish professional development in scholarly dissemination for research students, and require such training, to ensure that future scholarly researchers are aware of the changing*

*nature of scholarly publication, and their rights and duties under the current Copyright Act 1968 as amended.*

## **4 Summary**

This submission calls for two minor changes to the APA scholarship guidelines, and two recommendations to universities.

These recommendations are designed to bring Australian research graduates out from the era where print dominated research dissemination, and prepare them for one where the Internet is seen as the primary vehicle of research dissemination.

The changes are inevitable, but it is desirable for Australia to be in the leading wave of the change rather than a reluctant follower. The recommendations will enhance Australia's research standing globally, and enhance its capability for innovation.

## **5 Appendix – Co-signatories**

*The following organization has asked to be a co-signatory to this submission and endorsed it:*

### **Computing Research and Education Association of Australasia (CORE)**

(An association of university departments of computer science in Australia and New Zealand)

<http://www.core.edu.au/>

President: Justin Zobel (NICTA/RMIT), [jz@csse.unimelb.edu.au](mailto:jz@csse.unimelb.edu.au)

*The following individuals have asked to be co-signatories to this submission:*

Professor Robert Dale  
Centre for Language Technology  
Macquarie University

David Groenewegen  
ARROW Project Manager & ARCHER Project Director  
Monash University

Professor Heinz Schmidt  
Professor of Software Engineering  
RMIT University

Professor Justin Zobel  
Program leader and Principal Research Fellow  
NICTA

Professor Jenny Edwards  
Professor of Information Technology  
University of Technology, Sydney

Elke Dawson  
Acting Director  
Central Queensland University

Shirley Sullivan  
Information Consultant (Professional Practice)  
Baillieu Library  
The University of Melbourne

Professor John D Haynes  
Professorial Visiting Fellow  
School of Information Systems, Technology and Management  
University of New South Wales

Eve Young  
Coordinator, Digital Repositories  
The University of Melbourne

Rozana Kekovska  
Digital Repositories Officer  
The University of Melbourne

Daina Gibson  
Digital Repositories Officer  
The University of Melbourne

Bernadine Fernando  
Digital Repositories Officer  
The University of Melbourne

Lauren Schoch  
Digital Repositories Officer  
The University of Melbourne