

Undergraduate Research in Australia

Professor Angela Brew
Macquarie University, Sydney

An Australian Learning and Teaching Council Fellowship aimed to enhance student engagement in learning through supporting the development in Australia of undergraduate research and inquiry.:

- Overseas study tours to identify new resources and protocols.
- undergraduate research scholarship project.
- Regional Roundtables held in different states
- Australian Summit on the Integration of Research, Teaching and Learning. Communiqué developed
- website established with online resources and protocols
- Newsletter established (URNA)

May 2010

National Teaching Fellowship Report

UNDERGRADUATE RESEARCH EXPERIENCE PROGRAMS IN AUSTRALIAN UNIVERSITIES

Evan Jewell and Angela Brew

- Undergraduate research experience programs are widespread. 23 of the 39 universities have one or more.
- Programs cover many disciplines but there is a strong emphasis on STEM.
- Programs tend to target elite students.
- The primary aim is to maintain and grow a pipeline of undergraduates progressing into Honours and RHD.
- Most programs have been recently established and are growing in numbers.
- There is a trend towards creating Institution funded schemes offered on a university-wide basis.
- Student numbers in the programs though small in comparison to student enrolments, are significant (1500-2000) and increasing in some programs.
- Outcomes in terms of student experiences have generally not yet been evaluated.
- Funding is the primary challenge for the future, both in terms of sustainability and growth.
- Academic supervisors receive little financial or academic recognition from their universities for their role.

First Australian Summit on the Integration of Research Teaching and Learning

Communiqué

The first Australian summit on the integration of research teaching and learning has emphasised the vital importance of research experiences for undergraduates.

The summit, organised by Professor Angela Brew as part of her fellowship with the Australian Learning and Teaching Council, was attended by academic leaders from across Australia and also included experts from the USA and the UK. The purpose of this Communiqué is to highlight the strategic importance of integrating research and teaching for all Australian universities and of connecting undergraduate students with research.

Australia needs creative ideas and a research-minded population to become an innovative knowledge society. Further, the undergraduate experience is arguably the most important in shaping the future career trajectories of students. A critical part of this experience is the vital connection between teaching and research.

If, as the Commonwealth's report *Transforming Australia's Higher Education System* states, the Federal Government's aim is to 'drive improvements in productivity and create a smarter, cleaner and more competitive economic future for Australia', higher education must teach all students, not just research students, how to engage as much in the production of knowledge as in its acquisition. All students should be immersed in an environment where their learning is based on the most recent research findings. This should occur as early as possible in their undergraduate careers and learning should be underpinned by research experiences.

Engaging undergraduate students in research and inquiry contributes to strengthening world class research and is in line with best practice in other countries. It provides a way for higher education to address the needs of a 21st century workforce through developing important graduate attributes, including the skills of critical enquiry, noted by the Bradley Review Report as being important to all Australian universities. It engages students' meaningfully in higher education and prepares them for a 21st century world of work in which knowing how to create, inquire and critically evaluate knowledge is of increasing importance.

It goes to the heart of our future competitiveness as an innovative country, is critical to retention of the brightest and best students, and to reversing the alarming decline of Australian students entering PhD programs.

To achieve this, changes are required to the ways in which funding agencies within the higher education sector interact. It is important that DEEWR, the Australian Research Council (ARC), the National Health & Medical Research Council (NH&MRC) and the Australian Learning & Teaching Council (ALTC), work together to foster an environment where the connection between teaching and research is valued. To this end, ARC and NH&MRC grants should, as a matter of urgency, have a mandate to require research outcomes to feed into education at all levels. This is similar to National Science Foundation grants in the USA, where top researchers are required to work cooperatively with university lecturers to provide a rich contextual setting for undergraduate students with opportunities for them to participate in the research.

International best practice suggests that this is needed to drive an innovative and creative Australia, and that it is likely to be matched by improvements in the quality and quantity of world class research outcomes. Not only does this suggest a defining characteristic of our 'higher' education, it represents a significant opportunity for the Tertiary Education Quality and Standards Agency in ensuring and enhancing its quality and competitiveness.

The synergistic link between an educated workforce and economic development is undeniable. Exposing undergraduates to the vital link between teaching and research is one of the cornerstones on which a competitive Australia will be nurtured. If we fail to embolden our students to be creative, the future of Australia in 2020 and beyond, when our natural resources inevitably decline, will be bleak. It is vital that we now connect undergraduate students with research clearly and explicitly, to enable Australia to be a genuinely innovative knowledge society.

Prepared by Professor Angela Brew, ALTC National Teaching Fellow, Macquarie University, in collaboration with delegates at the First Australian Summit on the Integration of Research, Teaching and Learning.

Undergraduate Research in Australia

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Resources

We're committed to providing useful artifacts[™], protocols and resources to assist in developing research-based experiences for undergraduate students within courses and curricula as well as through extra-curricular activities.

The resources are designed to support new and emerging projects, provide opportunities for coordination and collaboration and serve to further the spread of undergraduate research and inquiry in Australian universities. Exploring what others are doing can provide you with contacts and resources to move you along.

You can search a database of resources, artifacts, protocols and case studies, an annotated bibliography of publications related to undergraduate research and a list of useful websites. You can also add your own ideas and resources.

What would you like to do?

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**The term artifact is used in this website to refer to a document that is intentionally produced by an author or authors for a particular purpose and recognized by the author(s) as fulfilling that purpose (Paraphrased from the Stanford Encyclopedia of Philosophy). In this website, documents may include sections of documents, pro-formas, texts, protocols, lists, websites, film and video, etc. Artifacts may be used for purposes other than those for which they were originally intended.*

Undergraduate Research in Australia

Information and resources for people interested in enhancing students' engagement through involving undergraduates in research and inquiry across the higher education curriculum and in research scholarship schemes

- Read about ideas and issues
- Find and suggest resources
- Learn about ongoing projects

<http://www.undergraduateresearchAustralia.com>

UNDERGRADUATE RESEARCH NEWS AUSTRALIA

Issue 1 Autumn 2010

Welcome!

Welcome to the first issue of *Undergraduate Research News Australia*. This occasional newsletter is designed to provide information about developments, upcoming events, and resources on engaging undergraduates in research and inquiry, principally in Australia.

In 2009 a series of events was held and information and resources gathered as part of my ALTC National Teaching Fellowship. During this time, over 300 names of interested individuals were gathered. These constitute an extended network and the newsletter is being sent to everyone on this list.

Please circulate widely and let us know of any other colleagues that you think would like to know of recent developments and resources in undergraduate research in Australia.

Professor Angela Brew

Macquarie University

March 2010

Website:

www.undergraduateresearchAustralia.com

On our website there are now links to information about undergraduate research projects. The website contains many resources to help staff setting up or extending opportunities for undergraduate students to engage in research and inquiry.

Some examples are:

- Research-based unit of study descriptions
- Writing research-based learning outcomes
- Assessing research-based learning
- Examples of ethics application forms
- Handout for students about choosing a research topic
- Tips on writing successful undergraduate research project proposals
- How to set up an undergraduate research vacation scheme
- Evaluating undergraduate research
- Independent study contract
- ... and much, much more

Search and/or add to the resources, the bibliography and the list of useful websites or give us some feedback. We would like to know what you think.

Undergraduate Research in Australian Universities

Contrary to popular belief, undergraduate research vacation scholarship schemes are alive and well in Australian universities. A survey has identified numerous schemes.

Consistent with the aims of the Fellowship, an undergraduate research project was carried out by Evan Jewell, a second year undergraduate student history student at Macquarie University. He surveyed existing practice in undergraduate research scholarship schemes in Australia and identified sources of funding used for student stipends. Nearly 70 individual vacation scholarship programs were noted within 23 Australian universities.

The survey also identified numerous charitable organizations that fund undergraduate research. A report will be available soon. A link to his summary poster is available on the website home page.

Key Events 2009

Five Regional Roundtables were held on the theme *Enhancing Undergraduate Engagement through Research and Inquiry in 2009*. In New South Wales and the ACT on 23rd September, at Macquarie University, Sydney; in Tasmania on 8th October, at the University of Tasmania, Hobart; in Victoria on 15th October, at Monash University, Melbourne; in Queensland on 16th October, at Griffith University, in Brisbane; and in South Australia on 19th November, at the University of South Australia, Adelaide.

These events brought together on a State-wide basis, members of the Fellowship National Team, associate deans and interested individuals. Further details of each Roundtable, including the presentations, by invited speakers are available on the website.

The First Australian Summit on the Integration of Research, Teaching and Learning was held on 5-6 November 2009 at the Swiss Grand Hotel, Bondi Beach, Sydney. This brought together senior academic managers to engage in sector-wide debates about the integration of research and teaching and the role of undergraduate research and inquiry in it. One of the outcomes of the Summit was the development of the Communiqué.

Keynote addresses were given by international experts including Professor Elaine Seymour, Director Emerita of Ethnography & Evaluation Research at the University

of Colorado at Boulder, USA; Professor Linda Slakey, Director, Division of Undergraduate Education, National Science Foundation, USA; Professor Philippa Levy, Director of the Centre for Inquiry-Based Learning in Arts and Social Sciences (CLASS), a Centre for Excellence in Teaching and Learning (CETL) at Sheffield University, UK; Professor Nancy Hensel, Executive Director for the Council on Undergraduate Research, USA and Professor Mick Healey, Director of the Centre for Active Learning (CeAL), a CETL at Gloucestershire University, UK. Members of the Fellowship National Team provided examples of practice.

A full and frank panel discussion was also held with invited panelists: Dr Juliette Baird, Audit Director, Australian Universities Quality Agency (AUQA); Mr David Barrow, President, National Union of Students; Professor Ian Hay, ALTC Discipline Scholar for the Arts, Social Sciences and Humanities, Flinders University; Professor John Rice, Executive Director, Australian Council of Deans of Science; and Professor Andrew Wells, Executive Director, Humanities and Creative Arts, Australian Research Council (ARC). The panel was chaired by Professor Mick McManus, Deputy Vice-Chancellor (International), University of Queensland.

The full summit program with podcast presentations by speakers and a copy of the Summit Booklet containing the full program, abstracts of sessions and biographical details of presenters are available on the website.

Communiqué

At the First Australian Summit on the Integration of Research, Teaching and Learning, held in Sydney on 5th & 6th November 2009, a Communiqué was prepared for widespread distribution, including political leaders and the wider community. The text of the Communiqué is available at: http://www.mq.edu.au/ultr/altc/ug_research/tes/Communiqué.pdf

