



**Supporting Success and Productivity:  
Practical Tools for Making Your University  
a Great Place to Work**

**SUPPORTING EARLY CAREER RESEARCH FOR  
WOMEN IN ACADEMIA**

Barbara A. Taylor  
Curtin University of Technology  
Australia

Martijntje M. Kulski  
Office of Teaching and Learning  
Curtin University of Technology,  
GPO Box U1987  
Perth, Western Australia 6845.

A challenge for many of the newer universities is how they can become more research intensive and provide the requisite skill development along with networking and mentoring opportunities for women early career researchers. This case study will profile a research focused staff development initiative which was established in 2000 at Curtin University of Technology (CUT) in Western Australia. We demonstrate that small minimally funded projects can be very useful starting points for universities seeking to help women advance their academic research careers. Our presentation will profile the types of projects which have received research seeding grants, and will advise how small scale funding has played a significant part not only in research successes but also in the academic promotion process to improve the successes of women applying. An overview of the professional development workshops offered as part of the Program will also be presented. Two further research initiatives, an international conference and a research leaders' two day event for Curtin's senior researchers have been outcomes and we will mention their impact as organizational learning opportunities. We also note that collaborations between research development units alongside organizational learning units can be cost effective ways of enhancing research opportunities for staff.

## **Background**

There are many factors which are recognized as creating barriers to women's advancement with research which include interrupted and fragmented employment, academic employment systems that are patriarchal and gendered, high teaching loads and heavy student contact, often referred to as 'academic housekeeping' (Eveline, 2004), a lack of mentoring and guidance, and the work/family potential conflict where universities have been acknowledged as being 'greedy institutions' (Currie et al, 2002, p.140) that do not support a family friendly work ethic.

It is well documented that academic women's research careers are slower to develop than their male counterparts (Hall, 1999). Women are under-represented in doctoral degree completions and take longer than men to complete their doctoral qualifications (Leonard, 2001, White, 1996). As a doctoral degree is often the first step to becoming a researcher, this longer and often later completion time can have a detrimental effect on women's research output as measured by indices such as the Research Assessment Exercise in the UK or the Research Performance Indices in Australia (soon to be replaced by the Research Quality Framework). Collins et al (1998) note that many of the academic tasks that women undertake and find challenging and rewarding, are unfortunately not those that are considered valuable for achieving promotion and tenure such as research and publication. A number of Australian universities over the past 10 years have put into place professional development research initiatives targeted at women. These initiatives are often part of an equity agenda and range from the provision of workshops, research conferences and mentoring to the provision of seeding grants.

## **Context of the Women in Research (WIR) Program**

Curtin University of Technology is Western Australia's largest university with over 40,000 students, over 17,000 of those are offshore and onshore international students. Curtin is a world-class, internationally focused institution whose programs centre around the provision of knowledge and skills to meet industry and workplace standards. The main campus is situated in Bentley, six kilometres south of the centre of Perth, Western Australia's capital city. Curtin has two additional metropolitan campuses and regional campuses in Kalgoorlie (a gold mining town) and Northam (a rural town). Curtin also has an offshore campus in Miri, Sarawak, Malaysia. As of second semester 2005, Curtin's newest campus was opened in the Sydney.

Curtin offers over 850 undergraduate and postgraduate courses in business, engineering, health sciences, humanities, science, mining and agriculture. Curtin also has an extensive Research and Development program with around 2000 research students.

Curtin achieved university status 20 years ago and whilst research in the science and technology areas is prominent, areas such as humanities, education and health sciences, which are traditionally female dominated disciplines, have been slower to generate research. Curtin has 1299 academic staff (in permanent positions, not including casual and sessional) of which 42 % are women.



Curtin's research vision is 'to establish productive partnerships that will facilitate high impact research that will respond to real world needs'. Curtin has developed strong research partnerships with industry and government within Western Australia which is a booming mining and resource rich state on the west coast of the Australian continent. Curtin's nearest neighbours are the countries of Indonesia, Malaysia and South East Asia. Western Australia is geographically closer to Singapore than Sydney. One of the downsides of this is that for many researchers, long hours of interstate and international travel is an essential component of creating research partnerships due to tyrannies of distance.

Curtin has identified five foci of research interest for future advancement of the University's research goals:

- Resources and Energy,
- Health, Ageing and Wellbeing,
- ICT and Emerging Technologies,
- Sustainable Communities and
- Growth and Prosperity.

At Curtin there are two competitive internal grant schemes for academic staff which assume some prior research experience. Internal research grants are: a) aimed at staff who has completed their PhD within the past 5 years and b) mid career researchers who have never been first investigator on an Australian competitive grants scheme proposal. The intention of both grant schemes is that researchers will then be able to compete for Australian research fellowships and grants and other collaborative grants schemes with industry partners. However these schemes are not focused on the needs of women researchers.

Due to some of the problems acknowledged earlier in this paper, of women developing a research career, current systems of rewarding research encourage the status quo and make it quite difficult for women to break into established research groups as shown in the five foci above. It is a double edged sword for many women, the better the research record, the more likely the funds and the more prolific the publication rate. Another problem for women particularly with heavy workloads in teaching and administration is that they have difficulty in starting or in maintaining their research activity. It is therefore almost impossible to gain the impetus they need when there are so many other demanding and competing tasks which are expectations of their academic roles.

It has been acknowledged by the Pro-Vice Chancellor Research and Development at Curtin, (*VC's Senior Management Conference presentation, June 07*) that there are both external and internal factors which affect Curtin meeting its research goals. The external factors are related to competition, ranking assessments and relevance expectations (high impact, research meeting real world needs). The internal factors are those that can be changed with the appropriate support and professional development opportunities. These factors are the willingness to engage in research, the courage to make a commitment and the uneven experience with research. It is against this background that the Women in Research Program (WIR) was established in 2000 to provide some support for women who wished to commence their scholarly contribution to academic life.

### **The Curtin Women in Research Program**

Since 1996, the Australian Technology Network (ATN) of five universities which includes Curtin has operated a cross institutional equity program, (the ATN Women's Executive Development Program -ATN-WEXDEV) which aims to advance the status of academic and professional women who are still under-represented at senior levels, within their universities. The Curtin ATN-WEXDEV program provided links to this national initiative but at the same time sought to provide particular development opportunities for all women at Curtin focusing on research.

The Curtin Women in Research (WIR) Program was proposed by a group of senior women researchers at the University at a time when early career researchers were finding it very difficult to break through the research barrier. Women in particular, were ineligible for larger funding schemes offered in the sector as they were

inexperienced and did not have a track record in research. In response to these issues, the Office of Research and Development (ORD) was approached by the Program Coordinator (first author) to provide funding for a program aimed specifically at building capacity within Curtin for women researchers. The WIR program commenced at Curtin in 2000 with a small annual grant (A\$15000) from ORD. The WIR Program seeks to assist women early career researchers by providing competitive seeding grants and associated professional development.

The aims of the Program are:

- to assist women with little research experience to develop their research profiles by awarding seeding grants;
- to support women's early research careers in identifying a network of colleagues to support the development of research in their Department and/or Division;
- to raise women's consciousness of research matters by provision of a series of workshops;
- to profile other women researchers within the institution who would act as role models and mentors for the group;
- to raise the research profile of women at Curtin.

### *Needs' Analysis*

Prior to the start of the WIR Program in 2000, a needs' analysis was undertaken with the target group of potential early career researchers. Expressions of interest were elicited from eligible female academic staff regarding their intention to undertake research in the next phase of their academic careers. The women were asked for suggestions on how the institution might support them in their research endeavours. What was particularly interesting is that at Curtin, this group often included women who had worked in the higher education sector for more than 20 years, mostly in teaching and supervision roles. Due to the changing nature of academic roles and the University's expectations that they also become research active, many women were particularly disadvantaged by not only having had little experience of the research role, but they were also lacking in skills to undertake research within their disciplines. Some women had just completed their PhDs but many were in the precipice caught hanging between meeting these changing obligations knowing they needed to have research experience to apply for academic promotion but at the same time, heavily involved with large teaching responsibilities.

It was noted that the target group of academics had often been employed as lecturers and course coordinators before being in a position to undertake research. Based on the information received from the needs' analysis, the WIR was established with two main components viz:

- A series of professional development workshops,
- The provision of research seeding grants.

### *The WIR professional development workshops*

Since the Program has been in operation, a series of workshops are conducted annually by successful researchers. The topics canvass a range of issues pertinent to the needs of new to research female academic staff including those wishing to undertake doctoral studies (42% of Curtin female staff have doctorates compared with 54% of male staff).

Over the evolution of the Program we continue to be responsive to the changing research agenda the University and across the sector, as demonstrated by the 2007 Program presented below, which was developed to reflect strategic research direction, leadership and culture.

- ***Research at Curtin – What are the Challenges?***

This session to be presented by the PVC Research and Development Professor Linda Kristjanson will outline the directions that Curtin needs to take during the next phase of the strategic plan. There are particular challenges with the Research Quality Framework. What opportunities are there for early career researchers to contribute to the research culture at Curtin? How might women progress their research careers and how could mentoring assist them?

- ***The Atn-Wexdev Research Leaders' Experience***

Dr Fay Rola-Rubzen and Dr Elizabeth Watkin were nominated to attend the ATN WEXDEV research leaders' capability workshop along with other colleagues from the ATN group. They also attended the recent ATN conference. This presentation will give both presenters an opportunity to reflect on how such a professional development workshop has enabled them to focus on their research goals and future academic careers.

- ***Starting the Doctoral Journey***

The Dean of Graduate Studies, Dr Leonie Rennie will outline the different pathways and advise on the process for starting your doctoral degree.

- ***Creating a research culture within a school/dept***

This session will be lead by staff from the School of Nursing and Midwifery, Professor Jill Downie, Head of School, A/Professor Dianne Wynaden and A/Professor Rene Michael.

Successful seeding grant recipients are also expected to make short presentations on their mid year progress as part of the annual program as discussed below.

### ***The WIR seeding grants***

A small amount of money is offered each year to assist women to build their research profile. In some cases, the grant is matched by their School/Department or other funding body enabling the research to progress further. Approximately A\$10000 is allocated in amounts ranging from \$1000 to \$2000. Women are invited to submit applications in November at the end of the academic year for a small scale pilot project. The money may also be used to provide time release from teaching in order to write academic papers which are to be submitted to a refereed journal. Over the course of the WIR Program, up to eight grants have been provided each year, in six rounds. To give an indication of the range of project topics funded, the following grants were awarded at the end of 2006 for the next academic year.

- Fluency and confidence program for adolescents who stutter (School of Psychology, Health Sciences)
- The initiation, persistence and desistance of bullying among 11-12 year old primary school students (School of Public Health, Health Sciences)
- The antecedents of negative affect: A case into the use of highly attractive models in advertising messages (School of Marketing, Curtin Business School)
- FDG PET assessment of SPN in WA: Follow-up review (School of Public Health, Health Sciences)

- Promoting reflective practice in undergraduate students of medical imaging science (Faculty of Media, Society & Culture, Humanities)
- Diversity of root nodule bacteria collected from Australian native legumes (School of Biomedical Sciences, Health Sciences)

## **Evaluation**

Summative evaluation of the Program is undertaken annually and written feedback is elicited after workshops. Seeding grant applicants are expected to provide a mid year report on their project and at the end of the year, an email is sent to elicit further feedback on outcomes related to further research activities and promotion.

An annual report is provided to ORD which details outcomes and on that basis, funding has been provided for each academic year since the Program's inception in 2000.

The evaluation has highlighted how both the seeding grants and workshops have assisted women to develop their research profiles by:

- raising women's consciousness of research;
- providing a forum for networking on research matters;
- providing an opportunity for developing mentoring pairs/groups/partnerships;
- providing guidance for successful paper preparation;
- providing a supportive environment and network to encourage paper submission; and providing an opportunity for Curtin staff to present conference papers or to attend research conferences.

Evaluation of the various components of the WIR Program have indicated that it has had a significant impact on women's motivation to engage with research by supporting them with professional development and networking to achieve research collaborations and output as noted by this seeding grant recipient:

The seeding grant has benefited me by allowing me to evaluate my current work patterns and priorities within the context of the expectations of the role of an academic, and to establish writing as a critical part of my academic output.

## **WIR Program outcomes**

In relation to the aims of the WIR Program the following specific outcomes are noted from anecdotal evidence of the participants. We relate these outcomes to the original goals of the Program and have included participant comments which are indicative of other comments received.

- ***Developing a research profile (and beginning to create a research team)***

I have moved from being a sole researcher to having a post doctoral researcher, 2 PhD students and one honours student in this field ( to supervise).

I am developing some ideas with some colleagues to consider programs which support beginning teachers - the next step on from this project.

This work forms part of a bigger project on the development of modernism in the built environment of Western Australian.

- ***Developing collegial research networks for collaboration and networks***

I am currently working with professional colleagues and Edith Cowan University (another WA university) staff to research pain management in dementia patients

Aspects of this work will be used in a collaborative project involving staff of Princess Margaret Hospital and the Institute for Child Health Research - we are currently awaiting the outcome of an application for funding.

- ***Awareness raising of research issues within the sector***

The Program has held sessions on the Research Quality Framework (Research Assessment Exercise in UK) and also the strategic importance of research funding for universities within the current Australian Government's research agenda.

- ***Profiling successful women researchers to act as role models and mentors***

The Program has profiled professorial staff, some new to the University, including the Pro-Vice Chancellor, Research and Development, who have presented workshops on their current research interests. These sessions have been particularly valued as they have demonstrated that it is possible to create research profiles along with the other responsibilities that women have for example: child rearing, one prominent researcher was profiled in the Australian newspaper along with her twin daughters and another recently appointed professor of chemistry had her first child shortly before being appointed to the professoriate. Both these women are excellent role models for younger staff.

- ***To raise the research profile of women at Curtin***

*I have also used work done on this project to inform a new project which is in the ethics approval process. I also plan to incorporate findings from this project into a presentation at Australian Association for Research in Education and hopefully this will lead to another paper.*

*The seeding grant is included among successfully completed projects in my broad area of research interests as part of my overall research track record.*

I have received other Curtin grants and it is possible that the WIR grant helped in terms of track record.

- ***Increased conference presentations, international and national***

Presented a paper at an international conference in Christchurch NZ, March 03. Topic of paper extended from the work previously published with assistance of seeding grant

Yes - international conference paper presented jointly (with colleague) to the Practical Experiences for professional Employment Conference, Auckland New Zealand, 2006

- ***Increase in the number of research proposals internal and external***

Yes. The seeding project has informed an Australian Research Council discovery grant submission. While the submission was unsuccessful in the first instance, it is currently being reworked for submission as part of a larger project for submission in 2008.

I have applied for funding via a Centre for Research and Graduate Studies Humanities Publications Grants in order to get teaching relief to pay for finalizing a paper based on this project.

Directly - small amount of additional funding provided to enable publication of booklet prepared by students on field placement and distributed to residents at the site involved with seeding grant project.

- ***Greater success in academic promotions***

Yes to senior lecturer in 2005.

I did receive a promotion in 2003 that the WIR may have assisted with.

- ***Successful in achieving higher level positions***

Yes – now A/P Director of Regional Education, Division of Resources and Environment

One of the most successful seeding grant applicants has acquired additional funding to the sum of a \$285,000 over three years for research in the mineral resources sector. Her research productivity and generation of research papers and conference presentations is worthy of mention below and demonstrates by example how this researcher's career has taken off since she gained the seeding grant in 2002. This researcher was also selected to attend a particular ATN WEXDEV Building Research Capacity Workshop in Sydney in 2006 and presented a workshop on her experiences as part of the 2007 Program. Her post-doctoral research fellow has also now been successful in the 2006 round of seeding grants.

**2005** CSIRO-Minerals Research Funding Allocation. "Identification and Quantification of Microbial Strains in Mining Biotechnology" (\$250,000 over three years). Sole investigator on this project

**2005** Parker Centre III Project. "Leaching and Biotechnology" (\$25,000 pa over three years). Listed as project leader. 0.2 allocation of my time.

**2004** Curtin University of Technology Division of Research and Development Special Allocation. "Molecular analysis of the total microbial community responsible for commercial bioleaching of mineral ores." (\$10,000). Sole investigator on this project.

Keeling, S.E., Davies, K.L., Palmer, M-L., Townsend, D.E., **Watkin, E.L.J.**, Johnson, J.A. and Watling, H.R. (2006) Utilisation of Native Microbes from spent chalcocite test heap. *Biohydrometallurgy* 83:124-131.

Two posters for the up coming 17th International Biohydrometallurgy Symposium (Sept 2007)

Identification of microbes isolated from leachate collected from experimental bioleaching columns.  
L. A. Mutch, E. Watkin and H. R. Watling

Quantification of Biomining Microorganisms using Quantitative Real-Time Polymerase Chain Reaction. C.M. Zammit, L.A. Mutch, H.R. Watling and E.L.J. Watkin

There have been additional professional development and research related outcomes (including an international conference) which are described below.

### *A further outcome - The ATN Researching the Research Agenda Conference*

As noted previously the Curtin WIR Program originated from the inter-institutional ATN-WEXDEV program. ATN-WEXDEV has provided opportunities for women to attend conferences organized throughout the participating institutions over the past 10 years. Many of these events had been located in the eastern states, a five hour plane trip, two time zones further east and also cost prohibitive for many women who did not received funding for such events. However there had not been a conference aimed specifically at the research agenda. It was proposed by Curtin (the authors) to plan an international research conference in 2003 to be held at Curtin. The ATN-WEXDEV program had links with many institutions in Europe, South Africa, North America and Asia and through the Association of Commonwealth Universities. A conference committee was set up at Curtin which included both academic and general staff. The committee was led by Professor Vera Mackie, Dean of Research in the Division of Humanities.

The conference provided:

- Experience for staff in organization and planning of an international major research initiative
- Opportunity for Curtin researchers to present papers and other research initiatives in a location that they could easily access (for some women this was their first conference attendance)
- Support with writing their abstracts and papers
- Feedback on their papers from the editorial committee (international and national experienced academics)

The outcome of the conference was a refereed conference proceedings publication (see example).

### *Institutional Impact and organizational learning impact*

A measure of the success of the Program in the context of organizational learning is that there have been a number of spin offs from the WIR initiative. In 2004 the Pro Vice Chancellor, Research and Development approached the Program Manager (first author) to run a series of research workshops aimed at all academic staff. ORD staff is the presenters and topics are wide ranging e.g.

- Intellectual property;
- Project Management for researchers;
- Budgeting and Costing of projects;
- Creating and Managing research teams;
- Writing grant proposals.

**A Research Leaders' two day conference** was also organized for Curtin's senior researchers in 2004. This conference was focused on the changing research agenda in higher education at a time when the Research Quality Framework was being piloted by Curtin. The Leadership Development Unit planned the conference, undertook the evaluation and presented the outcomes to the Pro Vice-Chancellor ORD.

Additional research activities have been implemented and a further research development workshop was organized focusing on developing a research career which was targeted at all Curtin early research academic staff. Thus, it is not only women who are benefiting from such professional development but men who are also wishing to develop their research careers.

At a time when universities within Australia are suffering from reduced government funding and student numbers are declining, organizational initiatives such as the WIR Program which is a collaboration between a core business area of the university and a staff development unit has demonstrated that a minimally funded initiative can be successful in supporting women to achieve research outcomes. Many women who have attended Program events have been regular attendees at workshop sessions. Other professorial staff have also attended and supported Program events. These initiatives have been additional elements of support, from what might be offered through the Divisional academic structures of the University creating a supportive culture for women seeking to start their research career journey, increasing research productivity and helping to make Curtin a great place to work.

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