

## Australian Capital Territory

### The Australian National University

**LP0989872** A/Prof SM Blackburn; A/Prof AP Rendell; Dr V Saraswat; Dr I Peshansky; Dr N Nystrom; Dr M Gupta

**Approved Project Title** High Performance Runtimes for Next Generation Languages

**2009 :** \$ 64,000

**2010 :** \$ 85,000

**2011 :** \$ 80,000

**Primary RFCD** 2803 COMPUTER SOFTWARE

APA(I) Award(s): 1

#### Collaborating/Partner Organisation(s)

IBM Research

**Administering Organisation** The Australian National University

#### Project Summary

X10 is a type-safe, memory-safe programming language. This project will help make X10 a viable choice for secure software on the next generation of computer architectures. The proposed project will contribute to a better understanding of the fundamental processes that advance knowledge and facilitate the development of technological innovations (a research priority goal). By addressing a key emerging problem and consolidating Australian-based expertise in this area, the project will also enhance Australia's capacity in frontier technologies research.

**LP0990000** Prof SH Bronitt; Mr D Kenyon; Dr PJ van der Eng; Prof FJ Ravenhill; Dr LE Botterill; Prof CC Findlay; Ms AM McNaughton; Mr HG Rammal; Prof A Capling

**Approved Project Title** Australia and the European Union: A study of a changing trade and business relationship

**2009 :** \$ 65,000

**2010 :** \$ 50,000

**2011 :** \$ 60,000

**Primary RFCD** 3601 POLITICAL SCIENCE

APA(I) Award(s): 1

#### Collaborating/Partner Organisation(s)

Department of Innovation, Industry, Science and Research

Department of Agriculture, Fisheries and Forestry

Department of Foreign Affairs and Trade

Delegation of the European Commission to Australia and New Zealand

European Australian Business Council

**Administering Organisation** The Australian National University

#### Project Summary

The project deepens understanding of the evolution of Australia-EU bilateral relations, and the EU's significant contribution to the Australian economy. It informs public debate and official dialogues in Australia and Europe about the ways in which the relationship may be fostered in future. Project findings contribute an understanding of the common ground and mutual support of Australia and the EU in international organisations such as WTO, and the further development of Australian and EU policies that will benefit bilateral trade and investment in both Australia and the EU. The research results will inform Australian government agencies in identifying policy options for further constructive relationships between Australia and the EU.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989167** Prof HC Charlesworth; Prof AC Byrnes  
**Approved Project Title** **Protecting economic, social and cultural Rights in the ACT: models, methods and impact**  
**2009 :** \$ 87,028  
**2010 :** \$ 40,313  
**Primary RFCD** 3903 JUSTICE AND LEGAL STUDIES

### Collaborating/Partner Organisation(s)

ACT Department of Justice and Community Safety

**Administering Organisation** The Australian National University

### Project Summary

This project will generate new thinking on the protection of economic, social and cultural rights. It will develop impact assessment frameworks and protocols for the assessment of compliance with these rights. The project will benefit not only the ACT by informing consideration of the inclusion of economic, social and cultural rights in the ACT Human Rights Act, but also other Australian jurisdictions' deliberations over bills of rights, including consideration of a national bill. Other benefits include training students and informing Australia's engagement with the UN on an Optional Protocol to the International Covenant on Economic, Social and Cultural Rights.

**LP0989488** Prof RG Elliman; Mr N Krause; Dr H Wang  
**Approved Project Title** **Switching mechanisms in nonvolatile resistive memory using high-k dielectrics**  
**2009 :** \$ 100,000  
**2010 :** \$ 100,000  
**Primary RFCD** 2402 THEORETICAL AND CONDENSED MATTER PHYSICS

### Collaborating/Partner Organisation(s)

Silanna

**Administering Organisation** The Australian National University

### Project Summary

Growth in the use of portable electronic devices, such as cameras, phones and MP3 players has resulted in an increased demand for low-power, high-density, non-volatile memory (NVM). One class of such memories aims to use resistance changes in thin dielectric films as a means of storing information. This project aims to develop a better understanding of these devices and to develop new and innovative processes for controlling data storage. The project is based on collaboration between researchers at the ANU and Silanna, an Australian start-up company aiming to develop and commercialise such technology.

**LP0989209** Prof DJ Hill; A/Prof Y Wang; Dr CJ Parker  
**Approved Project Title** **Power systems with diverse generation - implications, control and capability**  
**2009 :** \$ 85,000  
**2010 :** \$ 85,000  
**2011 :** \$ 85,000  
**Primary RFCD** 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

TransGrid

**Administering Organisation** The Australian National University

### Project Summary

This research will generate a systematic methodology to handle the impact of the renewable energy sources on the NSW power grid. It increases our understanding of the impact of climate change policies relating to mandatory targets for greenhouse gas reduction helping to build Australia's research capacity in the national priority area of an environmentally sustainable Australia. The anticipated methodology can also be seen as protecting the security of power infrastructure as well. Maintaining a critical energy infrastructure protects our way of life and ensures ongoing social, economic and environmental well being of Australia.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989292** Prof DB Lindenmayer

**Approved Project Title** **Best practice biodiversity management in reserves and other natural areas**

**2009 :** \$ 220,000

**2010 :** \$ 140,000

**2011 :** \$ 100,000

**2012 :** \$ 220,000

**2013 :** \$ 230,000

**Primary RFCD** 3006 FORESTRY SCIENCES

APA(I) Award(s): 2

### **Collaborating/Partner Organisation(s)**

Booderee National Park

Heritage and Biodiversity Conservation Section Estate Policy

**Administering Organisation** The Australian National University

### **Project Summary**

Well designed studies including rigorous experimental work are needed to quantify biotic responses to fire and invasive species control. This is essential to help guide managers of parks, military training areas and state forests in best practice methods to manage fire, invasive species and biodiversity. Thus, this project will have far reaching implications for improved environmental and biodiversity management in a wide range of sectors. Rapid climate change will exacerbate problems associated with altered fire regimes and invasive species. New insights from this research will enhance the capacity to manage Australia and overseas landscapes in response to rapid climate change.

**LP0989593** Dr KR McIntosh; Dr KJ Weber; Prof A Cuevas; Dr MJ McCann; Mr AH Karkkainen

**Approved Project Title** **Spray-on Hydrogenated Films for Solar Cells**

**2009 :** \$ 150,000

**2010 :** \$ 110,000

**2011 :** \$ 110,000

**Primary RFCD** 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

BraggOne Oy

Spark Solar

**Administering Organisation** The Australian National University

### **Project Summary**

A successful project will contribute to a reduction in the cost of photovoltaic solar energy. This goal might be reached directly, via the development of spray-on hydrogenated films, or indirectly, through an improved knowledge of hydrogen passivation. Either way, the project will provide Australian Partner Investigator, Spark Solar, with a manufacturing edge over its global competitors. In so doing, it will support the burgeoning photovoltaic industry in Australia, providing jobs in manufacturing and research, and increasing the viability of photovoltaic energy as an alternative to fossil fuels. The project will also help keep Australia at the forefront of advances in photovoltaics and semiconductors.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989358** Dr D McPhail; Dr MD Norman; Dr W McLean

**Approved Project Title** **Groundwater dynamics and surface water interactions in the Lower Murrumbidgee Catchment, New South Wales**

**2009 :** \$ 60,000

**2010 :** \$ 60,000

**2011 :** \$ 60,000

**Primary RFCD** 2605 HYDROLOGY

APA(I) Award(s): 1

LIF Award(s): 1

**Collaborating/Partner Organisation(s)**

Parsons Brinckerhoff

**Administering Organisation** The Australian National University

**Project Summary**

Water is Australia's most limiting resource. This research will contribute to the sustainable management of groundwater resources in the regional and rural areas of the Lower Murrumbidgee catchment, an important agricultural and horticultural region of Australia. Strategies for sustainable use of water resources will be improved by understanding the impacts of irrigation on groundwater quality and aquifer extractions. The project will train new scientists in current and new groundwater techniques and improve strategic linkages between the Industry and University sectors through support of student research and a Linkage Fellowship for the key industry partner participant.

**LP0989398** Prof H Morphy; Dr PJ Batty; Dr P Jones; Ms M Morris

**Approved Project Title** **Reconstructing the Spencer and Gillen Collection: Museums, Indigenous Perspectives and the Production of Cultural Knowledge**

**2009 :** \$ 144,000

**2010 :** \$ 139,000

**2011 :** \$ 165,000

**Primary RFCD** 3703 ANTHROPOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Museum Victoria

South Australian Museum

Northern Territory Library

Australian Capital Equity- Kerry Stokes Collection

**Administering Organisation** The Australian National University

**Project Summary**

Spencer and Gillen's research placed Australia at the heart of world discourse in anthropology at the beginning of the twentieth century and they influenced the paradigm changes that resulted in the development of the modern discipline. Digital technology now enables the material record of their research to be recreated as a whole revealing the richness of Aboriginal society in central Australia at the turn of the twentieth century and uncovering a crucial period in the history of anthropology. The research project will advance understanding of Australia's role in the history of anthropology and related disciplines in addition to creating a cultural resource of great value not least for the Indigenous communities themselves.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989811** Prof TJ O'Neill; Prof RD Terrell; Prof AH Welsh; Prof GS Monroe; Dr J Penm  
**Approved Project Title** **Investment approaches and opportunities in renewable energy and financial resource markets, using semi-parametric approaches to evolutionary subset time-series lattice-ladder modelling**

**2009 :** \$ 85,000

**2010 :** \$ 90,000

**2011 :** \$ 80,000

**Primary RFCD** 2302 STATISTICS

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

The Japanese Association of Administrative Science

Jiashan Fengyuan Co., Ltd.

Chien Chung Sun Investment Research

**Administering Organisation** The Australian National University

### **Project Summary**

The project findings will help Australian exporters and importers understand and manage energy and resource price risks more effectively. The investment community will benefit through selecting optimal asset allocations and enhancing value to investors. It will also benefit many other agencies, particularly in the service industries. It is not well recognised that in developed countries, including Australia, the financial service and related sectors account for more than 60 percent of economic activity and employment, so it is critical that more sophisticated statistical methods be established, and practical applications conducted, in order to advance the understanding of complexity management in the financial service and related sectors.

**LP0989338** Prof R Peakall; Dr KW Dixon; Dr C Linde; Dr SL Krauss; Dr RA Barrow; A/Prof EL Ghisalberti; Prof MF Hutchinson

**Approved Project Title** **A multidisciplinary research program to assess limiting factors and predict impacts of climate change for endangered Australian orchids**

**2009 :** \$ 220,000

**2010 :** \$ 190,000

**2011 :** \$ 200,000

**2012 :** \$ 150,000

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Botanic Gardens and Parks Authority

**Administering Organisation** The Australian National University

### **Project Summary**

Climate change poses a significant threat to biodiversity. Australian sexually deceptive orchids are dependent on obligate and specialised interactions with pollinators and fungi. Consequently, they may face a high risk of extinction if climate change uncouples these interactions. Thus orchids provide an important bio-indicator of change. The tools and expertise developed will contribute directly to the conservation of endangered Australian orchids, and will take into account the risks of climate change. The project will contribute to the priority research goals of sustainable use of Australia's biodiversity as well as responding to climate change and variability. The project will also provide high quality, cross-disciplinary training.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989385** Prof TW Pogge; Dr S Bessell; Ms JE Hunt; Dr CH Barry; Dr Y Liu; Prof AM Jaggar; Ms J Sloane; Dr IA Smyth; Prof FA Castillo

**Approved Project Title** **Assessing development: designing better indices of poverty and gender equity**

**2009 :** \$ 358,000

**2010 :** \$ 345,000

**2011 :** \$ 395,000

**Primary RFCD** 3799 OTHER STUDIES IN HUMAN SOCIETY

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

International Women's Development Agency

Oxfam Great Britain

Philippines Health Social Science Association

Action Against Hunger UK

University of Colorado at Boulder

Oxfam America (Southern Africa Regional Office)

**Administering Organisation** The Australian National University

### **Project Summary**

Contributing to development worldwide, this research raises Australia's global standing and helps fulfil the values and responsibilities of the Australian people. It strengthens the basis for gender-related and poverty-related policy development and service delivery within Australia and helps correct the current over-emphasis, in measuring domestic gender inequity, on the more privileged women.

Because severe poverty and radically unequal gender relations burden many of our South East Asian and Pacific neighbours, development aid remains an important plank of our foreign policy. By providing better tools for measuring poverty and gender inequity, this project can improve our understanding of our region and augment the impact of our aid.

**LP0989558** A/Prof BM Smyth; Prof B Rodgers; Dr JB Temple; Mr AT Shephard; Dr MT Esler

**Approved Project Title** **Changes in payments, family dynamics and wellbeing following major child support reform: a longitudinal investigation of behavioural and attitudinal responses**

**2009 :** \$ 276,000

**2010 :** \$ 210,000

**2011 :** \$ 196,000

**2012 :** \$ 64,000

**Primary RFCD** 3602 POLICY AND ADMINISTRATION

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Child Support Agency

Department of Families, Housing, Community Services and Indigenous Affairs

**Administering Organisation** The Australian National University

### **Project Summary**

This study will benefit the nation in three main ways: (a) it will measure the immediate impact of child support reforms on parent-child contact and the payment of child support; (b) it will provide an estimate of the consequences of these reforms for family dynamics (especially conflict, acrimony and the quality of parent-child relationships) and parents' and children's health and wellbeing; and (c) it will provide new evidence on the interrelationships between post-separation economic, social and psychological wellbeing irrespective of the reforms. Through this partnership between the University and relevant government departments, we are maximising the opportunity for shaping future policies and service delivery.

## Summary of Linkage Projects Proposals for Funding to Commence in 2009

**LP0989909** A/Prof L Tacconi; Dr FH Jotzo; Dr P Larmour; Dr EK Aisbett

**Approved Project Title** **Governance and economic incentives for reducing the contribution of tropical deforestation to climate change**

**2009 :** \$ 72,000

**2010 :** \$ 70,000

**2011 :** \$ 80,000

**Primary RFCD** 3009 LAND, PARKS AND AGRICULTURE MANAGEMENT

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Australian Agency for International Development

**Administering Organisation** The Australian National University

### **Project Summary**

The project will contribute toward global efforts to reduce global greenhouse gas emissions, thus mitigating the potential economic and environmental impacts of future climate change on Australia. Australia's neighbours will benefit from the project by putting them in a better position to gain financial transfers for foregone benefits of deforestation, and by insights on better systems of governance. The positive effects enjoyed by neighbouring countries are likely to translate into improved relations with Australia. At the level of international negotiations, the research will support Australia's ambitions for a meaningful post-Kyoto climate change agreement.

**LP0990012** Prof JS Williams; Dr S Ruffell; Dr JE Bradby

**Approved Project Title** **A novel approach to direct nanopatterning of silicon for advanced phase-changed devices**

**2009 :** \$ 140,000

**2010 :** \$ 120,000

**2011 :** \$ 120,000

**Primary RFCD** 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Hysitron Inc.

Wriota Pty Ltd

**Administering Organisation** The Australian National University

### **Project Summary**

This project will exploit key research developments at ANU in the field of nanotechnology, specifically nanofabrication of entirely new devices. In particular, this work will be exploited by a new Australian high-tech company, WRiota, to produce novel silicon phase change devices. The instrumentation developments will be commercialized by a leading nanoindentation company and the materials and device-related outcomes and IP will be retained and used by WRiota. This project will further provide valuable opportunities for a number of research students and ECRs to gain experience in both the industrial and academic worlds.

**LP0989584** Dr TD Windsor; A/Prof KJ Anstey; Dr PJ Butterworth; Prof M Sliwinski; Prof HL Kendig

**Approved Project Title** **Psychosocial and cognitive outcomes of residential relocation and retirement: The TRAnitions In Later Life (TRAILL) project**

**2009 :** \$ 50,000

**2010 :** \$ 50,000

**2011 :** \$ 50,000

**Primary RFCD** 3801 PSYCHOLOGY

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Illawarra Retirement Trust

National Seniors Association

**Administering Organisation** The Australian National University

### **Project Summary**

Individual and social issues surrounding older adults' residential relocation and the transition to retirement are increasingly important in the context of Australia's ageing population. A better understanding of the factors that influence psychological well-being and intergenerational relationships during these major life transitions will play an important role in informing government policy. This project aims to provide national and community benefits through informing policy related to housing and labour force participation, and by informing programs aimed at volunteer recruitment, retention and maximising the quality of the volunteer experience.

