

# Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

## Australian Capital Territory

### The Australian National University

**LP100100741** Prof Andrew W Blakers, Dr Kylie R Catchpole, Dr Matthew J Stocks, A/Prof Klaus J Weber, Dr Sudha S Mokkalapati

**Approved Project Title** **Advanced Sliver Solar Cells**

2010 \$215,000.00

2011 \$215,000.00

2012 \$280,000.00

Primary FoR 0906 ELECTRICAL AND ELECTRONIC ENGINEERING

APAI\_IT 2

APDI Dr Sudha S Mokkalapati

#### Partner Organisations

Origin Energy CSG Ltd

**Administering Organisation** The Australian National University

#### Project Summary

The expected outcome of the proposed research is the development of second generation Sliver solar cell technology, encouraging large commercial impact, which would be of substantial benefit to Australia in terms of export income and employment. Origin Energy has committed >\$60 million to the development and commercialisation of the first generation Sliver cell technology. Substantial further commercial investment is expected during scale-up for full scale manufacturing. Successful implementation of technology developed during the research will result in the displacement of fossil fuel technologies and corresponding greenhouse gas emissions reduction, assisting Government in its objective to make major cuts to greenhouse gas emissions.

**LP100100808** Prof Andrew W Blakers, Dr Vernie A Everett, Dr Marta Vivar, Mr Peter K LeLievre

**Approved Project Title** **Efficient PV-Thermal Micro-concentrator**

2010 \$60,000.00

2011 \$58,000.00

2012 \$60,000.00

Primary FoR 0906 ELECTRICAL AND ELECTRONIC ENGINEERING

#### Partner Organisations

Chromasun Pty Ltd

**Administering Organisation** The Australian National University

#### Project Summary

Australia must reduce its dependence on carbon sources for electricity, heating, and cooling. The PV-thermal hybrid micro-concentrator development will deliver a light-weight, low-profile, cost-effective system that can be installed in almost any situation, with versatile output that can deliver electricity at grid parity as well as providing water heating, space heating, industrial process heat, and solar cooling capabilities. The nation will benefit through enhanced energy independence, international research recognition, and reduced greenhouse gas emissions. Further, successful commercialisation of this technology will enhance Australia's research standing and provide a good royalty income that will fund future research and development.

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**LP100100143** Dr Lindell D Bromham, Prof David J Cantrill, Dr Daniel J Murphy, Prof Dr Timothy J Flowers, Prof Darren M Crayn  
**Approved Project Title** **Evolution of halophytes: a phyloinformatic approach to understanding and exploiting the traits underlying salt-tolerance in plants**

2010 \$80,000.00  
2011 \$80,000.00  
2012 \$73,000.00  
Primary FoR 0603 EVOLUTIONARY BIOLOGY  
APAI 1

### Partner Organisations

Qld Department of Primary Industries and Fisheries, Royal Botanic Gardens and National Herbarium of Victoria, University of Sussex

**Administering Organisation** The Australian National University

### Project Summary

Salinity is an increasing burden on the Australian economy & environment, with >2 million ha of salt-affected land, at an annual cost to agriculture over \$187 million. One solution is to exploit naturally salt-tolerant plants to increase productive agricultural land and restore salt-affected environments. To do this, we must increase basic knowledge of the diversity & distribution of salt-tolerance. This project is the first to use DNA sequences from thousands of species to understand the evolution of salt-tolerance in order to provide the foundation for the development of new crop varieties, selection of species that can be developed for bioremediation, and identification of traits that will be profitable targets for breeding programs.

**LP100100172** Dr David A Jones, Mr Des J McGrath  
**Approved Project Title** **Protecting tomato crops from Fusarium wilt through the efficient application of new genetic resources.**

2010 \$26,669.00  
2011 \$26,669.00  
2012 \$26,669.00  
Primary FoR 0607 PLANT BIOLOGY  
APAI 1

### Partner Organisations

Primary Industries and Fisheries

**Administering Organisation** The Australian National University

### Project Summary

The tomato industry is a major horticultural industry in Australia, and Queensland is the major producer of tomatoes for the fresh food market. In Queensland, the tomato industry has expanded in the face of the threat that Fusarium wilt could re-emerge as a major disease problem. This research will ensure that measures can be taken quickly and efficiently to protect existing genetic resources used to control Fusarium wilt. It will also improve our knowledge about the mechanisms plants use to defend themselves against Fusarium wilt diseases.

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**LP100100588** Prof Rodney A Kennedy, Mr Ramtin Shams, A/Prof Alistair P Rendell, Dr Parastoo Sadeghi, A/Prof Henry J Gardner, Dr Naga Govindaraju, Dr Paul England, Dr Lidong Zhou, Dr Eric I Chang, Dr Shipeng Li, Dr Feng-hsiung Hsu

**Approved Project Title** **Advancing Medical Image Analysis through High Performance Heterogeneous Computing, Numerical Simulation, and Novel Human Computer Interfaces**

2010 \$265,000.00

2011 \$255,000.00

2012 \$285,000.00

Primary FoR 0803 COMPUTER SOFTWARE

APAI\_IT 2

### Partner Organisations

Microsoft Research Asia

**Administering Organisation** The Australian National University

### Project Summary

This project will link Australian researchers with a major multi-national IT company. The engagement of world-class personnel from Microsoft will provide unprecedented opportunities for graduate students to experience research in both an academic and an industrial setting. The participation of Microsoft product division offers the potential to transform the outcomes of this project into widely-used software solutions. The project will pave the way for more widespread and reliable evidenced-based computer-aided diagnosis and image-guided treatment. It will produce well-trained and sought-after graduates and research associates with extensive inter-disciplinary knowledge of medical image analysis and high-performance computing.

**LP100100467** Prof David B Lindenmayer

**Approved Project Title** **Best practice temperate woodland assessment, management and monitoring**

2010 \$50,000.00

2011 \$50,000.00

2012 \$98,000.00

2013 \$120,000.00

Primary FoR 0502 ENVIRONMENTAL SCIENCE AND MANAGEMENT

### Partner Organisations

Murray Catchment Management Authority, NSW Department of Environment and Climate Change (DECC), NSW Department of Environment Climate Change and Water

**Administering Organisation** The Australian National University

### Project Summary

This ARC proposal is central to the goals of National Research Priority #1 – An environmentally sustainable Australia. The loss of biodiversity in agricultural landscapes in rural Australia is a major social, economic and ecological issue. Australian governments and local communities invest considerable money restoring temperate woodlands in agricultural landscapes. However, there remains considerable uncertainty about the effectiveness of this investment. This project will produce an unparalleled evidence-base for individuals and organisations that make long-term investments in these landscapes for conservation.

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**LP100100427** Prof Ann M McGrath, Dr Shino A Konishi, Prof Peter J Read, Dr Denis R Byrne, Dr Luke Taylor, Dr Darryl J McIntyre  
**Approved Project Title** **Deepening Histories of Place: Exploring indigenous landscapes of national and international significance**

2010	\$190,000.00
2011	\$180,000.00
2012	\$170,000.00
Primary FoR	2103 HISTORICAL STUDIES
APAI	3

### Partner Organisations

Director of National Parks, National Film and Sound Archives , NSW Department of Environment and Climate Change (DECC), Ronin Films

**Administering Organisation** The Australian National University

### Project Summary

Deeper knowledge of Australian landscapes and their interconnected histories of place will enhance the social well-being of the Indigenous and wider community. This regional and landscape-focused history project provides quality research outcomes that meet tourism industry demands for deeper historical insights into significant landscapes. Indigenous histories of people and land will be collaboratively researched. This project provides multi-media history training for both PhD students and local Indigenous people. It will see historians and other experts working with parks and major collections institutions towards richer interpretations of landscape. This innovative project renders Australia's complete history more accessible.

**LP100100721** Dr Robert G Schwab, Dr Janet E Hunt  
**Approved Project Title** **Philanthropy and Indigenous people: Enhancing Indigenous education outcomes**

2010	\$26,669.00
2011	\$26,669.00
2012	\$40,000.00
Primary FoR	1605 POLICY AND ADMINISTRATION
APAI	1

### Partner Organisations

Melbourne Community Foundation

**Administering Organisation** The Australian National University

### Project Summary

Indigenous Australians suffer a disparity in educational outcomes that frays the social fabric of the nation. While there is abundant evidence that education is empowering and the social and economic benefits of improving educational outcomes are significant, past and current efforts to increase educational attainment and enhance outcomes among the nation's most disadvantaged citizens have not achieved the gains most expected. A promising new pathway exists in creative and innovative approaches to the support of Indigenous education by a small number of philanthropic bodies. This research will examine philanthropy in this area and will provide important practical insights of value to the nation.

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**LP100100106** Dr Lyndall Strazdins, Prof Dorothy H Broom, Mr John D Glover, Dr Catherine Banwell, Dr Jane M Dixon, Dr Amy L Griffin, Dr Rosemary Korda, Miss Megan A Shipley, Dr Francesco Paolucci, Dr Marian T Esler, Dr Stephen J Corbett

**Approved Project Title** **Time scarcity in Australian families: another inequity?**

2010	\$71,000.00
2011	\$103,000.00
2012	\$81,000.00
2013	\$70,000.00
Primary FoR	1117 PUBLIC HEALTH AND HEALTH SERVICES
APAI	1

### Partner Organisations

Department of Families, Housing, Community Services and Indigenous Affairs , Sydney West Area Health Service

**Administering Organisation** The Australian National University

### Project Summary

The globalising economy, financial uncertainties and major democratic changes are all affecting family time. Parent's time is a resource on which children depend, but time scarcity has become a widespread problem for families. Our study helps focus policy attention on this problem. We deliver new methods to assess the experience of time scarcity in families, identifying those who are most likely to experience it, where they live, and how time scarcity affects them. This evidence can help support policy approaches to time, benefiting the twin economic and social policy goals of encouraging workforce participation while supporting the health and wellbeing of families.

**LP100100567** Prof Ian White, Prof Michael F Hutchinson, Mr Mike Williams, Mr David Hoey, Mr John-Paul Williams, Mr Dawit Berhane

**Approved Project Title** **Climate variability, water allocation and land use change impacts on surface-groundwater interactions and salinity discharge**

2010	\$115,000.00
2011	\$145,000.00
2012	\$190,000.00
2013	\$168,004.00
Primary FoR	0406 PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE
APAI	1

### Partner Organisations

NSW Department of Water and Energy

**Administering Organisation** The Australian National University

### Project Summary

This project contributes to the national research priority of an Environmentally Sustainable Australia and its three sub-priorities: Water-a critical resource; Overcoming salinity and acidity; and Responding to climate change and variability as well as to the National Water Initiative goal: connected surface and groundwater resources managed as a single resource. These embody the clear imperative in Australia to improve the management and use of our stream and groundwater systems in the face of long-term climate variability and changing water use. Knowledge gained from this study of coupled surface-groundwater systems in nationally important catchments will be used to improve water allocation and use strategies and salinity mitigation.