

Summary of Linkage Projects Proposals for Funding to Commence in 2009

New South Wales

University of Wollongong

LP0990708 Prof FP Deane; Dr J Ciarrochi; Dr LG Oades; Dr TP Crowe

Approved Project Title **Facilitating the transfer of training through values clarification**

2009 : \$ 77,500

2010 : \$ 135,000

2011 : \$ 117,500

2012 : \$ 60,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

APDI Dr TP Crowe

Collaborating/Partner Organisation(s)

Aftercare

NEAMI

Richmond Fellowship Queensland

SNAP Gippsland Inc

Mission Australia

Administering Organisation University of Wollongong

Project Summary

Mental health service workers who attend training programs seldom transfer that training into routine practice. This is at considerable cost to health services, patients and the community. This research program aims to improve skills transfer by supplementing training with a values-based intervention and ongoing coaching. By helping staff connect their training experience with important personal values we believe they will be more likely to use their new skills in routine practice, will engage in better health care will be more satisfied and less burnt out, and will be less likely to leave their jobs. It will help with future values-based interventions to improve workforce development initiatives in a range of Australian workplaces.

LP0990894 Dr D Gerace; Prof A Frino; Dr A Lepone; Prof M Pagano; Prof D Griffiths

Approved Project Title **Understanding market mechanisms and determinants of transaction costs to achieve greater efficiency in Australian fixed-income markets**

2009 : \$ 25,000

2010 : \$ 46,500

2011 : \$ 45,000

2012 : \$ 23,500

Primary RFCD 3402 APPLIED ECONOMICS

Collaborating/Partner Organisation(s)

Commonwealth Private

Administering Organisation University of Wollongong

Project Summary

This project will provide information to policymakers and regulators, enabling the evolution of optimal fixed-income markets, with significant benefits for individuals and the national economy. These benefits will be both short-term (current wealth) and long-term (retirement saving). It will promote Australia as the leader in constructing optimal fixed-income markets, which can be applied to similar markets around the world. Finally, training research students will develop research infrastructure in Australia, and contribute to produce a generation of specialists who will increase Australia's international standing in financial research and its ability to manage an increasingly complex economy.

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LP0991012 Dr ZP Guo; Prof HK Liu; Prof CD Cook; Dr H Zhu; Dr D Wexler; Dr XJ Zhu

Approved Project Title **Development of advanced lithium ion battery and battery management system for electric /hybrid electric vehicle applications**

2009 : \$ 40,000

2010 : \$ 80,000

2011 : \$ 80,000

2012 : \$ 40,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Redarc Electronics

DLG Battery Co. Ltd.

Administering Organisation University of Wollongong

Project Summary

This project represents a significant scientific and economic development for Australia as it aims to create advanced, high performing, energy storage devices with a focus on safety, that will provide enormous benefits for the environment. An added advantage will be the establishment of local and national expertise in the area of electrochemical energy storage systems, that will place Australia at the forefront of lithium ion battery research and development. Flow-on benefits will also be created for Australian organizations involved in the manufacturing of electric vehicles and portable devices.

LP0990336 Prof SC Jones; Prof A Worsley; Mrs CM Saunders; Ms R White; Mr GT Smith; Mrs M Goldman; Prof D Iverson

Approved Project Title **The use of social marketing strategies and adult education principles to improve asthma self management in older people.**

2009 : \$ 47,192

2010 : \$ 126,025

2011 : \$ 130,425

2012 : \$ 51,592

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Asthma Foundation NSW

Administering Organisation University of Wollongong

Project Summary

Asthma is estimated to affect up to 10 per cent of people aged 65+ some of whom experience the condition for the first time later in life. Mortality rates from asthma in Australia are highest in the older population and statistics show that older people are most likely to be admitted to hospital following attendance at an Emergency Department for asthma. Older people lack awareness about asthma, often manage it poorly, and their health related quality of life is impacted by asthma. There is disparity in asthma information, management and service provision targeted specifically to the needs of the elderly. This project will provide much-needed evidence on the effectiveness of carefully researched and targeted programs for older asthmatics.

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LP0990581 Dr DS Liyanapathirana; Prof HG Poulos; Dr R Kelly

Approved Project Title **New design guidelines and simplified analysis methods for geosynthetic reinforced pile-supported embankments**

2009 : \$ 19,000

2010 : \$ 36,000

2011 : \$ 34,000

2012 : \$ 17,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Coffey Geotechnics

Administering Organisation University of Wollongong

Project Summary

There is a growing demand in Australia for efficient technologies for soft soils due to increasing infrastructure development on marginal land characterized by soft ground. One such technology that is becoming popular is geosynthetic reinforced pile-supported embankment as it requires less land, construction time and maintenance. The outcomes of this research will lead to cost-effective and reliable infrastructure design of benefit to the many future infrastructure projects, totalling billions of dollars, planned for Australia. This project will therefore contribute significantly to the sustainability of our environment and increase the international competitiveness and export potential of the Australian construction industry.

LP0991845 Prof MJ Morwood; Dr J Ross; Dr KE Westaway

Approved Project Title **Change and continuity: chronology, archaeology and art in the North Kimberley, Northwest Australia**

2009 : \$ 71,000

2010 : \$ 141,500

2011 : \$ 143,000

2012 : \$ 72,500

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

Kimberley Foundation Australia

Department of Environment and Conservation

Kandiwal Aboriginal Corporation

Slingair Pty Ltd & Heliwork WA

Administering Organisation University of Wollongong

Project Summary

The project will tackle some of the most basic questions concerning cultural continuity and change in Australia - in a region that has a long history of 'outside' contact, and a spectacular Aboriginal rock art sequence of world heritage significance. It will be undertaken in partnership with local indigenous communities, representative organisations and other stakeholders, and will provide a venue for the training of indigenous and student participants. As well as high quality research outcomes, the project will produce information for strategic management of the Kimberley's unique cultural and natural heritage

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0991351 Dr JW Moscrop; Dr D Cuiuri; Prof CD Cook; Dr F Darmann

Approved Project Title **Compact high voltage superconducting fault current limiter employing a new core architecture and novel magnetic materials**

2009 : \$ 70,000

2010 : \$ 130,000

2011 : \$ 115,000

2012 : \$ 55,000

Primary RFCD 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

Collaborating/Partner Organisation(s)

Zenergy Power Pty Ltd

Administering Organisation University of Wollongong

Project Summary

The proposed project is an example of applied research that utilises a frontier technology (superconductors) in an application with both national and community benefits. Fault current limiters are designed to protect electricity grids. The integration of superconductors in fault current limiting applications allows for this protection to be achieved in an energy efficient manner, since negligible impedance is applied to the network during the un-faulted state. Effective and efficient protection of the electricity network is of national interest, with any failure affecting industry and individuals. The proposed research team is in a leading position to develop the potential of this technology for both national networks and a world market.

LP0990705 Dr LD Nghiem; Dr SJ Khan; A/Prof JE Drewes

Approved Project Title **Assessment and optimisation of N-nitrosamine rejection by reverse osmosis for planned potable water recycling applications**

2009 : \$ 35,500

2010 : \$ 71,000

2011 : \$ 71,000

2012 : \$ 35,500

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Veolia Water Australia

Queensland Manufactured Water Authority

Administering Organisation University of Wollongong

Project Summary

Water recycling is a strategic approach to secure potable water supplies in Australia. The underlying challenge is to protect public health by ensuring robust treatment processes capable of effectively eliminating contaminants of concern. This research aims to enhance the capabilities of advanced water treatment plant designers and operators to control N-nitrosamine concentrations by optimised reverse osmosis treatment. A predictive model will be developed allowing for the optimisation of N-nitrosamine removal by reverse osmosis filtration in full scale installation. The project will directly enhance the viability of indirect potable water recycling and thus reduce dependency on water sources vulnerable to climate change.

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LP0991428 Prof D Sutanto; A/Prof M Zhang; Dr CJ Parker

Approved Project Title **Emergency Control of Catastrophic Disturbances in a Power System**

2009 : \$ 47,500

2010 : \$ 87,500

2011 : \$ 80,000

2012 : \$ 40,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

TransGrid

Administering Organisation University of Wollongong

Project Summary

Following the tragic events of 11 September 2001, there are increased concerns about the security and robustness of power systems to evolving spectra of threats, such as natural disasters (e.g., earthquakes and hurricanes), equipment failure, human error, or deliberate sabotage and attack by terrorists. In this project, pattern recognition of local parameter changes in distributed monitoring systems will be used to identify any threatened breakdown in the power system. Once identified, methods based on intelligent agents will be used to trigger the appropriate countermeasures to maintain the integrity of transmission grids.

LP0990621 Prof GG Wallace; Dr SE Moulton; Prof M Forsyth; A/Prof RM Kapsa; Dr LL Atanasoska; Dr J Weber

Approved Project Title **Advanced Materials for Stents**

2009 : \$ 75,000

2010 : \$ 155,000

2011 : \$ 160,000

2012 : \$ 80,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Boston Scientific

Administering Organisation University of Wollongong

Project Summary

The polymer based materials targeted for production in this project will bring unique capabilities to the field of stent design. A multi-component degradable stent system is expected to bring significant improvements in vascular therapeutic treatments for a wide range of illnesses and applications. This will have significant advantages over current treatment and will have a positive impact on the quality of life of patients. The project brings together world leaders in their respective fields to address a highly multidisciplinary area of research and will provide excellent training for the PhDs and post doctoral research associates, enabling them to work in and contribute to the development of new biomedical industries in Australia.