

Summary of Successful Proposals by State by Organisation for Linkage Projects to Commence in 2009

New South Wales

Australian Catholic University	1
Macquarie University	3
The University of New England	1
The University of New South Wales	20
The University of Newcastle	6
The University of Sydney	19
University of Technology, Sydney	6
University of Western Sydney	6
University of Wollongong	4

New South Wales 66

Victoria

Deakin University	4
La Trobe University	4
Monash University	19
RMIT University	5
Swinburne University of Technology	2
The University of Melbourne	26
University of Ballarat	1
Victoria University	3

Victoria 64

Queensland

Griffith University	8
James Cook University	1
Queensland University of Technology	8
The University of Queensland	19
University of Southern Queensland	1
University of the Sunshine Coast	1

Queensland 38

South Australia

The Flinders University of South Australia	2
The University of Adelaide	12
University of South Australia	6

South Australia 20

Western Australia

Curtin University of Technology	1
Murdoch University	1
The University of Western Australia	8

Western Australia 10

Tasmania

University of Tasmania	3
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Tasmania 3

Northern Territory

Charles Darwin University	1
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Northern Territory 1

Summary of Successful Proposals by State by Organisation for Linkage Projects to Commence in 2009

Australian Capital Territory

The Australian National University

16

Australian Capital Territory

16

Total Number of Grants

218

Summary of Linkage Projects Proposals for Funding to Commence in 2009

New South Wales

Australian Catholic University

LP0989490 Asst Prof PT Howard; Prof S Saggars; Dr PR Flatau; Prof BF Cherednichenko; Prof J Butcher; Ms AC Hampshire; Mr JA Campton; Dr T Marchant

Approved Project Title **Social inclusion through community embedded, socially supported university education**

2009 : \$ 50,000

2010 : \$ 40,000

2011 : \$ 30,000

Primary RFCD 3701 SOCIOLOGY

Collaborating/Partner Organisation(s)

Mission Australia

St Vincent de Paul Society National Council of Australia

Administering Organisation Australian Catholic University

Project Summary

Through the collaboration of community agencies and tertiary institutions this research project identifies key impacts of community embedded socially supported higher education upon enhancing the social inclusion of disadvantaged Australians. It identifies the educational and social support factors which contribute to the effectiveness of this strategy and the cost and benefits of this innovative educational pathway to social inclusion for governments and the community.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Macquarie University

LP0989231 Prof HK Nevalainen; Em/Prof PL Bergquist; Dr VS Te'o; Dr MD Gibbs

Approved Project Title **Enantioselective nitrilases from filamentous fungi**

2009 : \$ 46,000

2010 : \$ 46,000

2011 : \$ 46,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Applimex Systems Pty Ltd

Administering Organisation Macquarie University

Project Summary

The optical characteristics (chirality) of chemical precursors are important for many fine chemicals. Chiral intermediates are in high demand by the pharmaceutical and agrochemical industries for the preparation of bulk drug intermediates and agricultural products. Nitriles are attractive starting points but their conversion to corresponding amides and carboxylic acids generates significant wastes. Their hydrolysis can be performed under mild conditions by enzymes termed nitrilases. We will work on fungal nitrilases as they present a globally attractive, yet untapped commercial target. The outcome for Applimex will be a suite of biocatalysts specific for the production of key intermediates for drug and agrochemical syntheses.

LP0989301 Prof AE Parker; Dr SJ Mahon; Mr AP Fattorini

Approved Project Title **Tools and techniques for cost effective creation of new, reliable and efficient microwave transistors for millimetre wave and wireless applications**

2009 : \$ 200,000

2010 : \$ 150,000

2011 : \$ 150,000

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Mimix Broadband Pty Ltd

Administering Organisation Macquarie University

Project Summary

Shifting the circuit design paradigm to the requirements of a circuit will provide a low-cost design solution for application with tight size, performance and lifetime constraints. This will enhance the international competitiveness of Mimix Broadband in the microwave wireless, aerospace, and radar markets, which will contribute to Australia's high performance circuit design sector. New knowledge and skilled researchers provided by this project will foster growth of the microwave and wireless industry. The local research community will be advantaged in international reputation and in its efforts to develop future high performance wireless systems.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989264 A/Prof QA Parker; A/Prof DH McKinnon; Prof JG Hedberg; Dr L Danaia; Dr J DeCourcy
Approved Project Title **Space to Grow: The Faulkes Telescope and improving science engagement in schools**

2009 : \$ 120,000

2010 : \$ 90,000

2011 : \$ 102,000

Primary RFCD 3302 CURRICULUM STUDIES

APDI Dr L Danaia

Collaborating/Partner Organisation(s)

Catholic Education, Diocese of Parramata

Las Cumbres Observatory Inc.

Catholic Education, Diocese of Bathurst

Department of Education and Training

Administering Organisation Macquarie University

Project Summary

Exceptional opportunities exist to engage, develop and enrich science students and their teachers through access to the cutting-edge Faulkes Telescopes (FTs). The FT South (sited in Australia) is the world's largest dedicated to educational use with Australia enjoying a 15% share as the host country of this exceptional educational initiative. Operated remotely via the internet, the FT provides natural links to ICT, on-line learning, physics, astronomy and mathematics. Given appropriate support, it can play a valuable role in re-engaging students in science and enhancing science education and literacy outcomes in Australian schools over the next 20 years.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of New England

LP0989177 Dr SG Winn; Prof I Hay; Ms L Foy; Mr C Campbell

Approved Project Title **Implementing and evaluating the Life Needs Model for young people with cerebral palsy**

2009 : \$ 30,000

2010 : \$ 30,000

2011 : \$ 30,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

The Spastic Centre New South Wales

Administering Organisation The University of New England

Project Summary

This study will provide evidence of a quantitative and qualitative nature about the access and engagement of people with cerebral palsy utilising a life needs model approach. The benefits are expected to be a decrease in dependency and a move towards greater interdependency, social inclusion, productivity and sustainability for people with cerebral palsy.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of New South Wales

LP0989507 Dr MM Chakravarty; Dr G Keller; Prof SL Peyton Jones

Approved Project Title **Dataparallel Programming for Multicore Processors**

2009 : \$ 98,000

2010 : \$ 101,000

2011 : \$ 101,000

Primary RFCD 2803 COMPUTER SOFTWARE

Collaborating/Partner Organisation(s)

Microsoft Corporation

Administering Organisation The University of New South Wales

Project Summary

The proposed project will contribute to the development of frontier technologies to help build Australian industries. The project is designed to unlock significant performance improvements with current and future multicore (processor) computer architectures. This potential performance improvement can be achieved with parallel programming models. This is crucial for ICT applications in performance hungry areas, such as biotechnology, finance, multi-media, and 'info-tainment'. The project will also provide research training and increase local expertise in parallel programming for multicore processors, an area that is quickly growing in importance.

LP0989997 Mr AM Giddy; Ms BA Ely; Mr MG Sims; Prof M Skyllas-Kazacos; Mr SF O'Hara; Ms SM Thomas; A/Prof LF Paroissien

Approved Project Title **Sustainable Public Art: Testing experimental technologies and ecological models for new interdisciplinary installations aimed at regenerating degraded sites.**

2009 : \$ 87,000

2010 : \$ 55,000

2011 : \$ 55,000

Primary RFCD 4102 VISUAL ARTS AND CRAFTS

Collaborating/Partner Organisation(s)

Sydney Olympic Park Authority

Broken Hill Community Incorporated

Studio Elicio PTY. Ltd.

Administering Organisation The University of New South Wales

Project Summary

The project develops new models of public art that combine natural and manufactured energy in ways that promote a culture of awareness about pressing environmental issues. The research highlights the need for an environmentally sustainable Australia and effective management of the nation's biodiversity by embodying these concerns in novel aesthetic systems that test clean energy production and its efficient storage. The latter have implications beyond the project for light industry, telecommunications and public utilities. Utilizing a range of adaptive technologies and natural elements in experimental ways, the project offers creative responses to critical questions of sustainability capable of being profiled internationally.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989969 Dr S Hand; Prof M Archer; Mr SA Hocknull; Mr TH Worthy; A/Prof JD Woodhead; Dr DI Cendon; A/Prof J Zhao; Dr IT Graham; Dr JD Scanlon; Dr GJ Price; Prof AR Chivas

Approved Project Title **Environmental change in northern Cenozoic Australia: a multidisciplinary approach**

2009 : \$ 300,000

2010 : \$ 300,000

2011 : \$ 300,000

Primary RFCD 2601 GEOLOGY

APDI Mr TH Worthy

Collaborating/Partner Organisation(s)

Xstrata Copper North Queensland

Queensland Museum

Outback at Isa

Mount Isa City Council

Administering Organisation The University of New South Wales

Project Summary

The Intergovernmental Panel on Climate Change (IPCC) warned that by 2020 to 2050, Australia will suffer significant biodiversity loss and water shortages. Our research will document and date the evolution of Australia's biota through three cycles of climate change over the last 25 million years to quantify and thereby better anticipate the nature and dimension of threats facing our natural and cultural communities. We will develop innovative techniques to date prehistoric biotic and climatic events and, using a range of tracers, characterize ancient environments and groundwater. This project will assist rural and regional Australia through education and job creation in geotourism and natural resource interpretation and provide a mechanism to combat generational skill shortage.

LP0990002 Dr N Kumar; Prof SL Kjelleberg; Dr SA Rice; Dr LH Yee; Dr N Barraud; Dr HV Meyers

Approved Project Title **Development of novel environmentally benign technologies for the control of bacterial biofilms in industrial applications**

2009 : \$ 130,000

2010 : \$ 135,000

2011 : \$ 125,000

Primary RFCD 2599 OTHER CHEMICAL SCIENCES

Collaborating/Partner Organisation(s)

WASTE TECHNOLOGIES OF AUSTRALIA PTY LTD

VINIDEX PTY LIMITED

Administering Organisation The University of New South Wales

Project Summary

Bacteria will attach to and form biofilms on almost all surfaces. This is particularly a problem in moist environments, including food preparation surfaces, pipe networks (eg. water, oil, and gas), water purification systems. The effects of bacterial biofilms are wide ranging and impact on human health, our capacity to use water resources effectively, and the environment where toxic chemicals are normally used to kill the biofilm. The technologies under development here have the potential to reduce our reliance on toxic chemicals as well as contribute to significant reductions in the cost to purify and distribute vital resources such as water as well as reducing bacterial contamination food surfaces.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989552 Prof PR Munroe; Dr SD Joseph; Dr L Van Zwieten

Approved Project Title **Conversion of Lignite to Biochars to Enhance Soil Fertility**

2009 : \$ 39,000

2010 : \$ 38,000

2011 : \$ 38,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Ingite Energy Pty Ltd

Administering Organisation The University of New South Wales

Project Summary

Lignite, or brown coal, is used in power generation, but it is uneconomic to transport and acts as a significant source of greenhouse gases. The conversion of lignite to liquid fuel and char provides an economic source of fuel and the generation of a char which also lowers the carbon footprint associated with lignite processing. Lignite-derived char has potential to act as an agent for both promoting plant growth and improving soil health. This project will do much to promote the use of chars, from a lignite source, which will increase the economic viability of mining brown coal.

LP0989930 Ms SA Nathan; Dr CW Evers; A/Prof LR Jackson Pulver; Dr CS Duncan; Dr R Henley

Approved Project Title **Social Cohesion through Football**

2009 : \$ 121,000

2010 : \$ 107,000

2011 : \$ 113,000

Primary RFCD 3702 SOCIAL WORK

Collaborating/Partner Organisation(s)

Sydney FC

Blacktown District Soccer Football Association

Sydney South West Area Health Service

Western Sydney Area Health Service

Transcultural Mental Health

Comm Relations Commission

Blacktown Migrant Resource Centre

Liverpool Migrant Resource Centre

Miller IEC

Administering Organisation The University of New South Wales

Project Summary

This project will help strengthen Australia's social and economic fabric, one of the priority goals aimed at promoting and maintaining good health for all Australians. The proposed inter-disciplinary study will provide new evidence on how sports programs can foster community building, social inclusion and social cohesion, helping families and individuals to live healthy, productive, and fulfilling lives. The proposed study will provide critically needed guidance on best-practice for governments and communities to develop and evaluate sport-based and related programs to address social cohesion and social inclusion. The result will enable humanitarian refugees to overcome barriers that hinder their participation in Australian communities.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989830 Prof BA Neilan; Dr SA Murray

Approved Project Title Regulation of saxitoxin production in bacteria and algae

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2703 MICROBIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Diagnostic Technology

Administering Organisation The University of New South Wales

Project Summary

In Australia, toxic algal blooms have had a devastating impact on marine and freshwater resources. In collaboration with a biotechnology company, this project will develop exciting new methods based on information regarding the genetics of the toxin, to monitor and potentially mitigate the effects of algal blooms on water supplies and aquaculture industries. We will use this method to determine the impact of light and salinity in regulating toxin production in cyanobacteria and algae.

LP0990054 Dr M Oeser; Dr AR Russell; Prof N Khalili

Approved Project Title Enhanced Analysis and Structural Design of Pavements - Virtual Laboratory for Advanced Pavement Design

2009 : \$ 100,000

2010 : \$ 120,000

2011 : \$ 80,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

ARRB Group Ltd

Administering Organisation The University of New South Wales

Project Summary

The proposed research will lead to improved pavement engineering procedures, which will reduce the maintenance costs for future pavement projects, and will result in cost-effective and more reliable design of new pavements.

LP0989493 Prof O Ostrovski; Dr G Zhang

Approved Project Title Characterisation of carbonaceous materials in production of manganese alloys

2009 : \$ 60,000

2010 : \$ 60,000

2011 : \$ 60,000

Primary RFCD 2913 METALLURGY

Collaborating/Partner Organisation(s)

Tasmanian Electrometallurgical Company

Administering Organisation The University of New South Wales

Project Summary

Optimisation of the carbonaceous materials feedstock in production of manganese alloys will increase energy efficiency and decrease environmental impact in operation of submerged electric arc furnace. Currently, Australia processes domestically only about 25% of produced manganese ore, while 75% is sold as raw material. Increase in production of manganese alloys will add value to the products and create additional employment opportunities, what will be beneficial to the Australian economy. The project will also contribute to further understanding of behaviour of coals in pyrometallurgical processes what will be beneficial to coal industry.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989719 Dr HM Paterson; Prof RA Bryant; Dr RI Kemp; Mr GR Dewsnap AFSM; Dr T Kirkpatrick
Approved Project Title **The impact of post-incident debriefing on psychological wellbeing and recall of events**

2009 : \$ 144,000

2010 : \$ 130,000

2011 : \$ 136,000

Primary RFCD 3801 PSYCHOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

NSW Fire Brigade

Administering Organisation The University of New South Wales

Project Summary

First response emergency service personnel, such as fire fighters, police officers and paramedics provide an essential service, but as a result of their work are at increased risk of developing Post Traumatic Stress Disorder (PTSD). In an attempt to protect against PTSD many personnel are required to attend group debriefings following exposure to traumatic events. However, there is evidence that these group debriefings may actually increase the risk of PTSD and also permanently distort the participants' memory for the events they witnessed. We will work with NSW Fire Brigade to develop an effective PTSD intervention for emergency service personnel which also preserves the integrity of the participants' memory for critical events.

LP0989373 Prof WG Randolph; Prof J Marceau; Dr RC Bunker; Dr H Easthope

Approved Project Title **Governing the Compact City: The Role and Effectiveness of Strata Management in Higher Density Residential Developments**

2009 : \$ 87,000

2010 : \$ 96,000

Primary RFCD 3101 ARCHITECTURE AND URBAN ENVIRONMENT

Collaborating/Partner Organisation(s)

Institute of Strata Title Management Ltd

Department of Lands

NSW Office of Fair Trading

Lannock Strata Finance

Andreones Pty Ltd

Macquarie Bank Ltd

Owners Corporation Network Australia Inc

Administering Organisation The University of New South Wales

Project Summary

The research will deliver systematic information about the operation of the strata system that regulates the majority of residential higher density housing in Australia. It will assist strata residents and owners and those involved in strata management and policy development to better understand the nature and scale of issues facing the strata sector and its capacity to self-manage these issues. It will therefore build an informed evidence base to support improved best practice and policy development across the sector. In addition, the research will make a major contribution to the emerging academic literature on local urban governance in higher density cities.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990075 Prof WG Randolph; Dr SM Pinnegar; Dr RC Bunker; Dr TG Wilson

Approved Project Title **Implementing metropolitan planning strategies: taking into account local level housing demand**

2009 : \$ 113,000

2010 : \$ 123,000

2011 : \$ 60,000

Primary RFCD 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

NSW Department of Planning

Landcom

Administering Organisation The University of New South Wales

Project Summary

This project will make a major contribution to our knowledge of contemporary urban change and will inform wider debates on the future of Australian cities. Providing planners and community stakeholders with a better understanding of housing demand at a local level, the research will assist in the implementation of metropolitan planning strategies, offering an effective framework that can incorporate affordability and social inclusion considerations. The research relates directly to the National Housing Supply Council's emerging agenda, which has identified the need to consider housing demand across a variety of spatial scales, and responds to the priority goal of strengthening Australia's social and economic fabric.

LP0989176 Prof C Rizos; Dr DT Woo; Dr B Li; Mr E Ramsey-Stewart; Mr K Johar

Approved Project Title **Mobility and Location Information providing Social Equality for Blind and Vision Impaired persons**

2009 : \$ 110,000

2010 : \$ 78,000

2011 : \$ 50,000

2012 : \$ 52,000

Primary RFCD 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Vision Australia

Ramsey Stewart Industrial Design

Administering Organisation The University of New South Wales

Project Summary

Providing reliable situational information to the blind and visually impaired (BVI) can deliver far greater independence. Confidence and autonomy will result from knowing where they are, what is in that location, how to go to the destination and the location related information. This will not only save a significant welfare costs but will also provide social equality to BVI. The underlying technology can also readily be extended to other socially useful and profitable applications.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989933 Dr TL Rogers; Dr CJ Hogg; Dr AS Andrew
Approved Project Title **You are what you eat: can tissues of top predators which show sequential dietary change identify long-term trends in ecosystems?**
2009 : \$ 100,000
2010 : \$ 100,000
2011 : \$ 100,000
Primary RFCD 3004 ANIMAL PRODUCTION
APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Zoological Parks Board of NSW (trading as Taronga Conservation Society Australia)
Environmental Isotopes

Administering Organisation The University of New South Wales

Project Summary

This project uses stable isotope signatures in the whiskers of top predators to determine foraging ecology. We aim to validate current stable isotopic models so this cost-effective tool can be used to examine large scale changes in food web dynamics in one of the world's climate hotspots in the Antarctic. Changes in the Antarctic directly impact the Australian community as our climate is affected by changes in Antarctica. As this project is part of an International Polar Year Program, Impact of CLimate induced glacial melting on marine and terrestrial COastal communities on a gradient along the Western Antarctic PENinsula (ClicOPEN), it strengthens Australia's international scientific links and exposes Australia's future scientists to internationally collaborative research which is of global significance.

LP0989901 Dr SA Ross; Dr SE Connor; Dr AI Herries; Dr G Burgers; Dr I Iliev; Ms A Sobotkova; Dr K Rabadjiev
Approved Project Title **Cultural change in its environmental context: exploring, interpreting, and managing archaeologically rich, large-scale cultural landscapes in the Mediterranean Basin**
2009 : \$ 70,000
2010 : \$ 20,837
2011 : \$ 26,267
Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

Collaborating/Partner Organisation(s)

Royal Netherlands Institute in Rome
Historical Museum, Yambol

Administering Organisation The University of New South Wales

Project Summary

(1) Production of a Holocene climate history and evaluation of long-term human response to environmental change in Mediterranean to continental climate zones. (2) Development of relationships with international researchers, including leading scholars from Italy, Bulgaria, the United States, and the Netherlands. (3) Extension of Australia's leadership in Mediterranean archaeology to the Balkans through building institutional relationships and initiating a presence in Bulgaria (arguably the most promising country in its region for archaeological research). (4) Development of innovative remote sensing methods for archaeological reconnaissance with wide applicability, including in Australian contexts and by other Australian research projects.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989262 Dr X Shang; Dr KR Fisher; Dr K Zhang

Approved Project Title **Social Support Provided in China to Older People with Disabilities**

2009 : \$ 80,000

2010 : \$ 85,000

2011 : \$ 82,000

Primary RFCD 3702 SOCIAL WORK

Collaborating/Partner Organisation(s)

China Research Centre on Ageing

Administering Organisation The University of New South Wales

Project Summary

The project contributes to understanding our region through the opportunity to demonstrate Australia's engagement with China, with which it is establishing strong links in social, economic and cultural interests. It contributes to national understanding of East Asian policies for older people with a disability, including partnership approaches to social support between government, non-government and communities. The project strengthens connections between Australian researchers and policy officials, the China Research Centre on Ageing, and Chinese government organisations.

LP0989365 A/Prof RM Stuetz; Dr HM Coleman; Dr SJ Khan; Dr P Le-Clech; A/Prof JE Drewes; Dr KN Power

Approved Project Title **Optimising Decentralised Membrane Bioreactors for Water Reuse**

2009 : \$ 120,000

2010 : \$ 120,000

2011 : \$ 100,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

MidCoast Water

Bega Valley Shire Council

NSW Department of Health

Hunter Water Corporation

Administering Organisation The University of New South Wales

Project Summary

Water is a critical resource in Australia and as pressures on water resources increase, water recycling has emerged as an important component of water management practises throughout Australia. Decentralised wastewater treatment systems (or package plants) offer opportunities for water recycling in regional communities; however this application is limited by our understanding on the removal of contaminants of concern through these treatment systems. This project will assess the suitability and efficiency of decentralised membrane bioreactors (MBRs) for the removal of endocrine disrupting chemicals (EDCs), pharmaceutically active compounds (PhACs) and pathogens in accordance with the 2006 National Guidelines for Water Recycling.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989304 A/Prof J Wang

Approved Project Title **A new abrasive waterjet milling technology and process models for fabricating energy-efficient electrical machines from amorphous magnetic metal laminations**

2009 : \$ 111,000

2010 : \$ 123,000

2011 : \$ 117,000

Primary RFCD 2903 MANUFACTURING ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Glassy Metal Technologies Ltd.

Administering Organisation The University of New South Wales

Project Summary

As the most energy-efficient core material for electrical machines, amorphous magnetic metal (AMM) can save more than 36% of the energy wasted by ordinary electrical motors. Since electrical motors consume about 70% of all the electricity generated, if all electrical motors in Australia use AMM as the core material, an annual energy saving worth approximately \$4 billion and an annual reduction of 16 million tonnes of greenhouse gas emission in Australia are expected based on the predicted electricity consumption in 2010. This project will develop a new technology for fabricating larger electrical machines from AMM laminations. It targets the national research priorities in Frontier Technologies and An Environmentally Sustainable Australia.

LP0990057 Prof AM Williamson; Dr BR Molesworth; Ms RJ Mitchell

Approved Project Title **Human Factors and Patient Safety**

2009 : \$ 90,000

2010 : \$ 85,000

2011 : \$ 110,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APDI Ms RJ Mitchell

Collaborating/Partner Organisation(s)

Clinical Excellence Commission

NSW Health

Administering Organisation The University of New South Wales

Project Summary

In some cases hospitalisation can result in the patient becoming worse, or even dying, due to the experience. These events cost the community unnecessary pain and suffering and consume healthcare resources. Prevention of adverse events in healthcare will contribute to Promoting and Maintaining Good Health. Improving our ability to deal with failures in healthcare, including those due to human factors, will have a significant impact on their reduction.

LP0989778 Dr SA Wood; A/Prof CK Carter; Prof MH England

Approved Project Title **Using Advances in Bayesian Statistics to Estimate Australian Rainfall Variations in a Climate Change World.**

2009 : \$ 80,000

2010 : \$ 85,000

2011 : \$ 75,000

Primary RFCD 2302 STATISTICS

Collaborating/Partner Organisation(s)

Elders

Administering Organisation The University of New South Wales

Project Summary

Modelling changes to rainfall patterns answers many important questions about changes in Australia's climate. This is essential to protecting our biodiversity and ensuring Australia's environmental sustainability. The project will address such issues as the extent to which the entire distribution of daily rainfall has changed over time, which areas of Australia have been most affected by this change and to what extent are these changes related to global climate indices. The latest advances in Bayesian statistics will be used to introduce flexibility and complexity into the model.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of Newcastle

LP0989965 A/Prof SG Fityus; Prof SW Sloan; Prof JP Carter; Dr OP Buzzi; Prof GE Giani; Mr HG Buys

Approved Project Title Barriers for cost - effective rock fall hazard mitigation.

2009 : \$ 180,000

2010 : \$ 180,000

2011 : \$ 160,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Roads and Traffic Authority

RailCorp

Administering Organisation The University of Newcastle

Project Summary

Rock fall barriers are used throughout Australia to protect its extensive road and rail networks. These networks are vital links in the nation's infrastructure and underpin its economic prosperity and development. There are thousands of cuttings on Australia's transport networks, many of which have the potential to be affected by rock falls. These events can take lives and severely disrupt the performance of our transport infrastructure. This project will develop new cost-effective methods for designing against rock fall events using a combination of advanced testing and computer modelling.

LP0989636 Prof KP Galvin

Approved Project Title Application of Water Based Fractionation in the Assessment of Metallurgical Coal

2009 : \$ 38,000

2010 : \$ 110,000

2011 : \$ 40,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Australian Coal Research Limited

Rio Tinto Australia

Administering Organisation The University of Newcastle

Project Summary

The metallurgical coal market (13% of coal market) is highly specialized, and competitive. The coal, which is utilized as a reducing agent in iron making, represents more than 52% of Australian coal exports. This study addresses growing evidence that organic liquids used to fractionate and in turn assess metallurgical coals lead to negative assessments, hence loss of markets, and lost opportunities. A new water based fractionation method will be established, and a systematic investigation into the effects of the organic liquids will be undertaken. These results will be used to build a case for replacing the organic liquids used in the industry, which are known to have negative health and environmental impacts.

LP0989757 Prof GC Goodwin; Dr JC Aguero Vasquez; Dr JA De Dona; Dr MM Seron; Dr L Brus; Dr T Wigren; Dr S Craig

Approved Project Title Power Control and Scheduling for Cellular Communications

2009 : \$ 120,000

2010 : \$ 150,000

2011 : \$ 100,000

Primary RFCD 2301 MATHEMATICS

Collaborating/Partner Organisation(s)

Ericsson AB

Administering Organisation The University of Newcastle

Project Summary

Australia is a major user of cellular communications technology with four 3G networks. There is huge public interest in core performance metrics including coverage, quality of service, power consumption and cost. The research covered by this proposal is aimed at improving the above performance metrics and hence achieving greater satisfaction from the Australian public in their wireless communication systems.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990068 Prof JM Gore; Dr WA Amosa; Dr A Bracken

Approved Project Title **Effective Implementation of Pedagogical Reform**

2009 : \$ 65,000

2010 : \$ 50,000

2011 : \$ 56,000

2012 : \$ 56,000

Primary RFCD 3303 PROFESSIONAL DEVELOPMENT OF TEACHERS

Collaborating/Partner Organisation(s)

Catholic Education Office, Diocese of Parramatta

Administering Organisation The University of Newcastle

Project Summary

A central challenge faced by nations around the globe is how to maximise the quality of teaching, since the quality of teaching itself is the main contributor to student achievement. Building on an internationally recognised model for Quality Teaching, this collaborative project promises to advance national initiatives in improving teaching quality and improve Australia's international status in the provision of quality education for all school students.

LP0989459 Dr MJ Mahony; Dr J Clulow; Dr A Ward; Prof SC Donnellan

Approved Project Title **Building sound ecological restoration strategies for endangered amphibians**

2009 : \$ 231,000

2010 : \$ 131,000

2011 : \$ 155,000

2012 : \$ 140,000

2013 : \$ 118,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Sydney Olympic Park Authority

Strathfield Council

South Australian Museum

NSW Roads and Traffic Authority

Department of Environment and Conservation NSW

Administering Organisation The University of Newcastle

Project Summary

This project integrates the principles of ecology and restoration ecology to secure the persistence of a population of an endangered frog in the context of a large urban renewal and ecological rehabilitation precinct at the Sydney Olympic Park. Habitat rehabilitation at the site provides an unrivalled opportunity for ecology to provide robust scientific direction and support for conservation management practices and develops the site as a model site illustrating adaptive management practices. The project investigates the role of two threatening processes in amphibian decline in a habitat management context and the outcomes have wide implications for the global amphibian decline.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989386 A/Prof J Wiggers; Prof RG Room; Dr P McElduff; Mr BC Rowland; Dr JL Mallick; A/Prof C Bell; Dr L Wolfenden; Mr MJ Livingston; Ms KE Gillham

Approved Project Title **Reducing alcohol misuse: The efficacy of a comprehensive accreditation intervention in community sports clubs**

2009 : \$ 90,000

2010 : \$ 140,000

2011 : \$ 132,000

2012 : \$ 84,964

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Australian Drug Foundation

Hunter New England Population Health

Turning Point Alcohol and Drug Centre

Administering Organisation The University of Newcastle

Project Summary

The prevention of alcohol misuse is increasingly recognised as a priority by State and Commonwealth governments, and the community alike. A similar increasing recognition of the role of sport in the occurrence of such misuse has resulted in a call for action in this community setting. Very limited data are available regarding effective intervention strategies in sports clubs. The proposed intervention directly addresses this knowledge deficit. In addressing the culture of excessive alcohol consumption in sports clubs, the intervention, should it be effective, has the potential to contribute to a reduction in both short and long term alcohol harms in Australia.

The University of Sydney

LP0989486 Dr BJ Ackermann; Prof DT Kenny; Dr TR Driscoll

Approved Project Title **Sound practice: Supporting sustainable careers in orchestral musicians through Occupational Health and Safety initiatives**

2009 : \$ 240,000

2010 : \$ 118,000

2011 : \$ 129,000

2012 : \$ 91,000

2013 : \$ 156,042

Primary RFCD 3210 CLINICAL SCIENCES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Australia Council for the Arts

Sydney Symphony Orchestra

The Queensland Orchestra

Melbourne Symphony Orchestra

Orchestra Victoria

Tasmanian Symphony Orchestra

Adelaide Symphony Orchestra

West Australia Symphony Orchestra

Australian Opera and Ballet Orchestra

Administering Organisation The University of Sydney

Project Summary

This project will produce new knowledge about musician health, well-being and injury prevention and management. It will establish the first injury surveillance system for musicians internationally and the first set of rigorous studies to evaluate the effectiveness of injury management interventions for orchestral musicians. We will establish musician-specific assessment protocols, practices and interventions leading to effective OHS policies, thus enabling global improvement in OHS in the music industry, preventing economic and personal loss from premature career termination due to injury, and assisting, through mentoring, the new generation of young orchestral musicians.

LP0989881 Prof MA Adams; Dr TL Turnbull; Dr TN Buckley; Dr NG Phillips; Prof DT Tissue; Dr RW Vervoort; Dr CJ Hepplewhite

Approved Project Title **Testing climatic, physiological and hydrological assumptions underpinning water yield from montane forests**

2009 : \$ 260,000

2010 : \$ 213,000

2011 : \$ 204,000

2012 : \$ 108,000

Primary RFCD 2704 BOTANY

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

ACTEW Corporation Limited

Administering Organisation The University of Sydney

Project Summary

Water collected in dams and reservoirs remains the mainstay water resource for Australian cities, towns and industry. Overwhelmingly, that water is collected from forested catchments where the water balance of forest stands is dominated by the amount of water used by trees. Characterising tree water use, its response to changing climatic and nocturnal conditions, and other aspects of stand hydrology, are crucial to our ability to predict and model future water yields. Working in the Cotter catchment near Canberra and the upper Kiewa catchment in north-east Victoria, we aim to help the agencies responsible for water and catchment management to improve the security of their forecasts of water yield and their on-ground management.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

- LP0989387** Prof LA Baur; Prof A Bauman; Dr B Smith; Ms K Chapman
- Approved Project Title** **Food and drink company sponsorship of children's sport: publicity or philanthropy?**
- 2009 :** \$ 87,000
2010 : \$ 118,000
2011 : \$ 85,000
- Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES
- APA(I) Award(s): 1
- Collaborating/Partner Organisation(s)**
The Cancer Council NSW
- Administering Organisation** The University of Sydney
- Project Summary**
Currently food and beverage company sport sponsorship in Australia has not been analyzed or regulated. The proposed research will incorporate both of these neglected areas by determining current patterns of food company sponsorship and by driving new programs and policies to support sporting organisations in promoting children's health in a consistent fashion. This study will challenge commonly held assumptions and social norms relating to the value of food company sponsorship, which is classically viewed as good corporate behaviour, but may in fact have adverse health effects.
- LP0989752** Prof BJ Eggleton; Dr S Frisken
- Approved Project Title** **Tailoring ultrafast pulses for Tb/s transmission with advanced modulation formats**
- 2009 :** \$ 96,000
2010 : \$ 95,000
2011 : \$ 90,000
- Primary RFCD** 2917 COMMUNICATIONS TECHNOLOGIES
- Collaborating/Partner Organisation(s)**
Optium (Australia) inc
- Administering Organisation** The University of Sydney
- Project Summary**
Ultrahigh bandwidth communications technologies will play an increasingly important role in the social and economic development of Australia. The potential benefit is emphasised by the recent decision to build a broadband network valued at \$8 B that will link the vast majority of Australian homes and businesses by high speed optical fibre. In this project we will investigate innovative approaches for optical transmission of data at the ultrahigh bit rates required by these next generation networks. These approaches will be based on technology developed in Australia by the Partner Organisation Optium Corporation, leading to further growth opportunities within the Australian manufacturing operation of this company.
- LP0989190** Prof D Feng; Dr J Kim; Prof MJ Fulham; A/Prof S Eberl
- Approved Project Title** **A new generation of multi-modality biomedical image visualisations**
- 2009 :** \$ 150,000
2010 : \$ 170,000
2011 : \$ 150,000
- Primary RFCD** 2801 INFORMATION SYSTEMS
- Collaborating/Partner Organisation(s)**
Royal Prince Alfred Hospital
- Administering Organisation** The University of Sydney
- Project Summary**
This research will overcome the urgent and significant burden in the routine clinical visualisation of multiple-modality biomedical image data, which are complex and exquisitely detailed from the new generation of high-resolution medical imaging scanners. Together with our industry partner RPA Hospital, we will produce 3D visualisation methodologies that will simplify and revolutionise the way biomedical data are visualised, analysed and interpreted by imaging specialists and disseminated to doctors and patients. Given the pivotal role that imaging plays in modern healthcare, this will improve diagnosis and assessment, and enhance Australia's leading position in the development of frontier technologies.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990067 Prof J George; Dr JY Yang; Dr FC McKay; Dr V Suppiah; Dr DR Booth; Prof G Stewart; Dr M Bahlo

Approved Project Title **Functional Genomics to Predict and Enhance Response to Interferon**

2009 : \$ 145,000

2010 : \$ 110,000

2011 : \$ 115,000

Primary RFCD 2702 GENETICS

APA(I) Award(s): 1

APDI Dr V Suppiah

Collaborating/Partner Organisation(s)

Roche Australia LTD

Administering Organisation The University of Sydney

Project Summary

The increasing number and huge cost impost of new therapies to health providers, both worldwide and nationally, has not yet resulted in a concomitant increase in strategies to optimise their use. Many of the new therapies are proteins (recombinant human proteins or humanised monoclonal antibodies). The improved use of one of Australia's most expensive commonly used protein drugs, pegylated interferon ribavirin (Peg-IFN-R), could potentially produce savings to the Pharmaceutical Benefits Scheme (PBS), and improve delivery of healthcare to thousands of Australians.

LP0989594 Dr DJ Hawes; Prof BE Barnett

Approved Project Title **The HPA-axis as a marker for disruptive behaviour disorder subtypes in toddlers**

2009 : \$ 80,000

2010 : \$ 90,000

2011 : \$ 70,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Karitane

Administering Organisation The University of Sydney

Project Summary

Emerging neurobiological models of antisocial behaviour emphasise the role of the hypothalamic-pituitary-adrenal (HPA) axis in the onset of disruptive behaviour disorders (DBDs). Given the broad consensus that antisocial trajectories originate in the toddler years, this project will use cortisol measures of HPA-axis activity to identify the mechanisms through which developmental factors interact with parenting and family environment to shape persistent DBDs; this will be achieved by following toddlers with severe DBDs across a controlled trial of a parenting intervention.

LP0989529 A/Prof TA Langrish; Dr C Loo; A/Prof HT See

Approved Project Title **Improving iron ore agglomeration by studying underlying mechanisms using experimental studies and dimensional analysis**

2009 : \$ 80,000

2010 : \$ 70,000

2011 : \$ 75,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BHP-Billiton Technology

Administering Organisation The University of Sydney

Project Summary

The revenue from Australia's iron ore exports is currently worth over \$15 billion. Over 80% of the shipped ores are fines (ie material smaller than 9mm), which have to be sintered to produce a lumpy product prior to reduction and smelting in iron making blast furnaces. An understanding of this process at the fundamental level is essential for enhancement of the nation's technological standing with our key trading partners - that is, to enable Australian iron-ore exporters to become 'knowledgable' suppliers. In addition, local iron-making industries will gain direct economic benefit from the improved sintering processes developed.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989201 Dr Q Li; Prof MV Swain; Mr R Pieper
Approved Project Title **Design Optimisation for Fabrication of Ceramic Prosthetic Devices**

2009 : \$ 88,000
2010 : \$ 110,000
2011 : \$ 111,000

Primary RFCD 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Sirona Dental Systems

Administering Organisation The University of Sydney

Project Summary

The project aims to develop computer aided design and fabrication for ceramic prosthesis. It will help establish a world-class biomedical instrumentation company having part of its research and development in Australia. The study will not only foster domestic research expertise, but also provide the local prosthetic community and biomedical industry with an opportunity to participate in further innovation of biomaterials, biomedical software and equipment. The outcomes will directly benefit the Australian prosthetic profession. Improvement in prosthesis restorative longevity for our increasing ageing population will support the national research goal of ageing well, ageing productively.

LP0989687 A/Prof AJ Martin; Dr MJ Anderson; Dr R Gibson; Dr DR Sudmalis

Approved Project Title **The Role of Arts Education in Academic Motivation, Engagement, and Achievement**

2009 : \$ 120,000
2010 : \$ 124,000
2011 : \$ 100,000

Primary RFCD 3301 EDUCATION STUDIES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Australia Council for the Arts

Administering Organisation The University of Sydney

Project Summary

Research is needed to examine the impact of arts education on students' motivation, engagement, and achievement. Findings will help better direct funding and policy to arts education that makes a real difference in the academic and non-academic lives of children and young people. In the school context, findings will link directly to aspects of arts education and achievement motivation that enhance educational attainment, reduce disengagement, and instil greater satisfaction with school life. At a national level, findings will provide an evidence base for the integrated development of cultural, educational and social capital that better enable Australia to contribute to leadership and advocacy in the arts internationally.

LP0989825 Prof AB McBratney; Dr B Minasny; Dr JJ De Gruijter

Approved Project Title **The auditability of soil carbon**

2009 : \$ 112,000
2010 : \$ 112,000
2011 : \$ 112,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Environmental Earth Sciences International P/L

3D-Ag P/L

Administering Organisation The University of Sydney

Project Summary

Agriculture has the capacity to capture and store carbon emission in soil. However there is no guarantee that the industry will be able to benefit from carbon offsets in the current and future carbon economy, because there is no accurate and efficient way of measuring soil carbon storage. This project will provide a methodology that can measure and monitor soil carbon storage on individual farms with statistical confidence, which is crucial to the agricultural industry taking part in the carbon economy.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989312 A/Prof D Muller; Dr G Iaffaldano; Dr C Heine; Dr P UNTERNEHR; Dr MI Ross

Approved Project Title Integrating deep-earth and surface processes for frontier-basin exploration

2009 : \$ 160,000

2010 : \$ 180,000

2011 : \$ 185,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APDI Dr C Heine

APDI Dr G Iaffaldano

Collaborating/Partner Organisation(s)

TOTAL

Shell International Exploration & Production, Inc.

Administering Organisation The University of Sydney

Project Summary

It is well-known that mantle convection has a profound influence on basin evolution, and the next step will be to quantify this relationship and provide the science that will make these concepts applicable to exploration. To do this, we will develop a workflow to link plate-reconstruction software with the mantle convection modelling to link plate motions mantle convection and the history of sedimentation systematically for the first time for frontier basin-scale applications. We will apply these emerging technologies to the evolution of basins in the Arctic borderlands frontier for resource exploration and on the Australian continent.

LP0989786 Prof BD Roufogalis; Dr CC Duke; Dr VH Tran

Approved Project Title Ginger-based agents for delaying the onset of metabolic syndrome: type-2 diabetes and dyslipidemia

2009 : \$ 100,000

2010 : \$ 75,000

2011 : \$ 75,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Buderim Ginger Pty Limited

Administering Organisation The University of Sydney

Project Summary

We will determine the potential of ginger, a relatively safe and popular food and spice, to be developed as a preventative nutraceutical agent to delay the onset of type 2 diabetes and its complications. Our research will allow us to formulate a standardised ginger preparation of known mechanism of action that delivers safe and reproducible effects. The project has the capacity to reduce the debilitating effects of type 2 diabetes in the nation's health and its high economic costs, and to improve the quality of life of the Australian community, more than 1 million of whom are affected by this growing epidemic.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989241 A/Prof RJ Stancliffe; A/Prof C Bigby; Prof SA Balandin

Approved Project Title **Transition to retirement by adults with chronic disabilities: increasing community capacity**

2009 : \$ 108,000

2010 : \$ 111,000

2011 : \$ 117,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AFFORD Australian Foundation for Disability

St John of God Accord

Administering Organisation The University of Sydney

Project Summary

This project will contribute to healthy, productive ageing by people with chronic disabilities. This group are living longer and will retire from their disability-specific supported employment and day program services. They then risk social exclusion, loneliness and associated poor health outcomes. This project will provide training and support to local community groups and voluntary work settings, to increase community capacity to support this group to participate actively in and contribute to their community in retirement. This will result in increased participation by this group and improvements in their well-being. Training resources developed by the project will be available to disability service providers nationally.

LP0989291 Dr GA Sword; Dr S Sukkarieh; Prof SJ Simpson; Dr GM Brooker; Mr PA Spurgin

Approved Project Title **Autonomous tracking and predictive modelling of Australian plague locust migratory band movement**

2009 : \$ 120,000

2010 : \$ 120,000

2011 : \$ 100,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Australian Plague Locust Commission

Administering Organisation The University of Sydney

Project Summary

We will use advances in robotics, engineering, mathematics and biology to develop a new computer model for the control of one of the world's most damaging pest insects: locusts. Autonomous aerial robotic systems will be used to collect data on Australian plague locusts travelling in devastating migratory bands. These data on band movement and the behaviour of individual locusts within the band will be used to develop a particle physics-inspired predictive model of migratory band movement, which will be used to optimise locust control operations. Economic, environmental and social benefits will arise through reductions in the amount of time, money, manpower and insecticides necessary to combat locust outbreaks.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989129 Dr CR Warren

Approved Project Title **Understanding plant uptake of organic and inorganic nitrogen for optimal fertiliser application in forestry**

2009 : \$ 86,000

2010 : \$ 86,000

2011 : \$ 80,000

Primary RFCD 3006 FORESTRY SCIENCES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Forestry Tasmania
Great Southern Limited

Administering Organisation The University of Sydney

Project Summary

Nitrogen (N) in soils occurs in both organic and inorganic forms. Plants can take up inorganic N - nitrate and ammonium - but, on average, these account for only 5% of the soluble N in soils. Recent evidence suggests that plants may be able to tap into some of the 95% of N that occurs in organic forms. We will investigate the importance of organic N uptake for two plantation Eucalyptus species by tracing the uptake of different N forms by bacteria, fungi and eucalypts. This information will redefine what is meant by 'available N' and will guide the development of a new test for soil N status.

LP0989926 Prof PM Waterhouse

Approved Project Title **Practical application of gene silencing: is delivery of long double stranded ribonucleic acid (dsRNA) by plant cells efficient in conferring host resistance to parasitic nematodes?**

2009 : \$ 80,000

2010 : \$ 70,000

Primary RFCD 2704 BOTANY

Collaborating/Partner Organisation(s)

NemGenix Pty Ltd

Administering Organisation The University of Sydney

Project Summary

Nematode that attack plants cause \$120 billion of crop losses worldwide. Chemicals used for their control are being phased out because of environmental concerns, and natural resistance is limited. The aim of this project is to use Australian IP to develop a new form of resistance to nematodes based on knowledge of the host-pathogen interactions. A successful outcome could contribute an additional 5-20% increase in crop yields (depending on the crop) through inherent resistance of crops to nematode pests. This would benefit rural communities and the national economy, and could also generate international royalties.

LP0989144 Prof JI Westbrook; Prof J Braithwaite; A/Prof K Gibson; Dr RJ Paoloni

Approved Project Title **Use of information and communication technologies to support effective work practice innovation in the health sector: a multi-site study**

2009 : \$ 420,000

2010 : \$ 440,000

2011 : \$ 440,000

2012 : \$ 250,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Sydney South West Area Health Service

Administering Organisation The University of Sydney

Project Summary

Australia must develop and implement new models of health service provision to increase capacity and reduce errors within workforce and resource constraints. Working with one of the largest area health services in NSW this project will address this challenge. The results will directly benefit the community by creating and testing new models for how health professionals can use information technologies to improve the safety, quality and efficiency of health care services. The findings will underpin national efforts to improve the productivity and effectiveness of the health workforce and its ability to respond to changing demands. The effective use of IT is a critical enabling factor for national productivity and growth.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989998 Dr SB Williams; Dr O Pizarro; Dr D Fox

Approved Project Title **Autonomous repeatable surveys for long term monitoring of marine habitats**

2009 : \$ 120,000

2010 : \$ 105,000

2011 : \$ 95,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

Collaborating/Partner Organisation(s)

Advanced Technology Systems Australia Defence Services Pty Ltd

Administering Organisation The University of Sydney

Project Summary

Australia has committed to using marine resources in a sustainable manner and to conserve the biodiversity of its marine habitats. In order to manage its marine environment effectively, marine scientists, managers and policy makers require timely and accurate information on the state of the environment. Current knowledge and techniques are limited and will have difficulty scaling to satisfy Australia's needs. A monitoring system that relies on machines to perform a substantial fraction of survey work and basic data analysis can scale more easily and provide more information at lower costs.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

University of Technology, Sydney

LP0989721 Dr L Cao; Prof C Zhang; Dr W Wang

Approved Project Title **Pattern Analysis and Risk Control of E-Commerce Transactions to Secure Online Payments**

2009 : \$ 115,000

2010 : \$ 110,000

2011 : \$ 105,000

Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

A2 Consulting Pty Ltd

Administering Organisation University of Technology, Sydney

Project Summary

The instant filtering of risky online payments is critical for merchants and online payment service providers to control fraud and thus reduce immense losses every year. This project will deliver new and workable techniques for on-the-fly discovering e-payment fraudsters in e-commerce. It can safeguard Australian online businesses and build and transform Australian merchants and online payment associations by delivering frontier techniques and smart e-payment fraud prevention and risk control to boost Australian online businesses and competitive capabilities globally. The resulting systems, researchers trained and publications will further enhance Australia's global leading role in tackling critical data mining challenges and applications.

LP0989708 Dr SK Lal; Mr P Fischer

Approved Project Title **Evaluation of train driver work culture and environment for improving railway safety**

2009 : \$ 77,000

2010 : \$ 65,000

2011 : \$ 75,000

Primary RFCD 3504 TRANSPORTATION

Collaborating/Partner Organisation(s)

Signal Network Technology Pty Ltd (Signet)

Administering Organisation University of Technology, Sydney

Project Summary

This innovative research intersects the fields of neurosciences, computer science and engineering, leading to application of new knowledge for developing intelligent train driver systems for improving transport safety. Such research will place Australia at the forefront of this area. Reducing train related accidents will positively impact on the socio economic fabric of society by reducing the emotional and financial burden to the community. The research has the potential to lead to substantial revenue generation in Australia in the future. The data obtained will provide new knowledge and information to transport and Government authorities.

LP0990087 A/Prof MR Phillips; Dr KS Butcher

Approved Project Title **Development of Low Cost, High Quality Nitrides for Solid-State Lighting and Other Power Saving Applications**

2009 : \$ 111,000

2010 : \$ 88,000

2011 : \$ 91,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BluGlass

Administering Organisation University of Technology, Sydney

Project Summary

The advent of high brightness, low cost, compact, low power white light-emitting diodes (LEDs) will revolutionise lighting as we currently know it. Incandescent light bulbs and fluorescent tubes are inefficient light sources and their replacement with high efficiency solid state LED lighting over the next 10 years will provide a 10% reduction in global greenhouse gas emissions. The development and enhancement of a recent Australian innovation for the fabrication of low cost high brightness LEDs will enable Australia to be at the frontier of this technology and to be a world leader in the next stage of its development.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989839 Dr TS Pitsis; A/Prof SK Sankaran; Prof Dr SP Gudergan; Prof SR Clegg

Approved Project Title **Governance Matters: identifying and making sense of the antecedents to project-blowouts**

2009 : \$ 150,000
2010 : \$ 135,000
2011 : \$ 135,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Helmsman

Administering Organisation University of Technology, Sydney

Project Summary

This project will have both national and international benefits as the problem of project blow-out is a global reality. The capability to predict, account for and resolve problems and issues that impact on project outcomes will contribute to the management of projects conducted by the public or private sectors and through public/private sector collaboration. The national benefit of this project cannot be overstated and will include but will not be limited to the better management of project outcomes that will be derived from cross-industry learning and the development of a framework for managing project blow-outs.

LP0990084 Dr SM Valenzuela; A/Prof DK Martin; Dr BA Cornell

Approved Project Title **Devices that use Ion Channels**

2009 : \$ 85,000
2010 : \$ 85,000
2011 : \$ 85,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Collaborating/Partner Organisation(s)
Surgical Diagnostics Pty Ltd
Seagull Technology Pty Ltd

Administering Organisation University of Technology, Sydney

Project Summary

The proposed device would supply the community of researchers in Australia and internationally with new techniques to enable them to quickly and conveniently investigate properties of ion channels and to speed the screening of potential ion channel targets for pharmaceutical hits and leads. In addition, the tethered membrane technology will be developed to fill an unmet need for a quick and biologically relevant test of EMC hazards. This will enhance the science and technology infrastructure within Australia, taking it into original and exciting directions, contribute to training young Australian scientists and students, as well as enhance Australia's competitive position in the field of nanobiotechnology.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989685 Prof S Vigneswaran; Dr JK Kandasamy; Dr HK Shon; Dr R Sleigh; Prof RM Ben Aim; Mr A Chanan

Approved Project Title **Supported biomass membrane bioreactor: optimisation of aeration for better fouling control**

2009 : \$ 70,000

2010 : \$ 70,000

2011 : \$ 70,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Collaborating/Partner Organisation(s)

Steri-flow Filtration Systems

Kogarah Council

Administering Organisation University of Technology, Sydney

Project Summary

This project will lead to a sustainable, affordable, energy-efficient treatment system for water reuse. The technology developed will particularly benefit small sewage treatment plants in coastal and isolated communities in Australia, by maximising the utilisation of water resources where water is limited, and by reducing the environmental impact of waste discharges. This project will also strengthen research links between Australian and European institutions through the development of this innovative technology. Local water industries will directly benefit from this frontier research.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

University of Western Sydney

LP0989906 Dr T Covic; Dr A Sharpe; A/Prof J Pallant; A/Prof N Manolios; Mrs D Aspinall

Approved Project Title **Motherhood choices: a decision aid for women with rheumatoid arthritis**

2009 : \$ 35,000

2010 : \$ 40,000

Primary RFCD 3801 PSYCHOLOGY

Collaborating/Partner Organisation(s)

Arthritis NSW

Administering Organisation University of Western Sydney

Project Summary

Decisions about pregnancy in the context of debilitating rheumatoid arthritis impact directly on both the mother and the child as well as their family and wider social unit. Providing evidence-based information to support women in making informed decisions about motherhood is critical in maximizing the well-being of the mother and ensuring a healthy start to life for a baby. The project will contribute to the national research priority area of promoting and maintaining good health, addressing the goal of supporting a healthy start to life.

LP0989219 Dr JA Fitzgerald; Prof SJ Simoff; Dr TR Sloan; Dr P Samaranayake; Mr M Johnston; Ms A Larkin

Approved Project Title **Visual optimisation of patient flow in Hospital Emergency Departments**

2009 : \$ 45,000

2010 : \$ 30,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

Collaborating/Partner Organisation(s)

Campbelltown Hospital

Administering Organisation University of Western Sydney

Project Summary

Recent policy announcements by the State and Federal Governments have centred on the need to explore the use of process management principles, normally applied to manufacturing industry, to health services management. This multidisciplinary project addresses one of the most pressing needs in health services - provision of methods to reduce patient queues and waiting times in emergency departments through interactive computing simulation to visualise and plan work process improvements. This smart use of information will benefit hospital managers, patients and their carers, is transferable to other health contexts, and by optimising resource usage has the potential to help build Australian (health) business.

LP0989383 Dr EJ Halcomb; Prof R Griffiths; Dr S Sloggett

Approved Project Title **A Model of Integrated Care for Dependant Older People Living in the Community**

2009 : \$ 26,140

2010 : \$ 27,000

2011 : \$ 27,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Carrington Centennial Care

Tunstall Australasia Pty Ltd

Schwarz Family Practice

Administering Organisation University of Western Sydney

Project Summary

This research offers significant economic, health and social benefits. Promoting and maintaining good health and ageing well, ageing productively are national priority areas. Case management and telemedicine are both recognised strategies to support chronic disease self-management. Early intervention can offer significant benefits in morbidity and mortality. Enhanced service delivery using an integrated model encompassing general practitioners, practice nurses and community carers, could improve chronic and complex disease management and reduce health costs.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989290 Prof DE Jackson; Ms L Luck; Prof LM Wilkes; Mrs M Clarke

Approved Project Title **Violence in the hospital setting: Testing the predictive validity of a violence assessment tool for nurses**

2009 : \$ 26,140
2010 : \$ 26,140
2011 : \$ 26,140

Primary RFCD 3211 NURSING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Sydney West Area Health Service

Administering Organisation University of Western Sydney

Project Summary

Violence against nurses persists as an ongoing problem in the Australian health care settings. This form of violence negatively impacts on nurses' job satisfaction, performance and productivity, morale, retention and recruitment and may cause physical and/or psychological injury. By developing a violence assessment tool, this project will enable nurses to routinely assess individuals for potential violence and address the issue before violence occurs. In addition, this project will provide evidence for policy makers and health care professionals to encourage a more pro-active approach to support vulnerable nursing staff against potential violence in the emergency and general ward area.

LP0989534 Dr CJ Leo; Prof BN Indraratna; Dr JJ Zou; Dr C Rujikiatkamjorn; Mr R Golaszewski; Mr TD McWilliam; Dr H Wong; Prof DT Bergado

Approved Project Title **Geotechnical characterisation of compacted ground based on passive ambient noise techniques**

2009 : \$ 77,000
2010 : \$ 69,000
2011 : \$ 65,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)
Penrith Lakes Development Corporation
Coffey Geotechnics

Administering Organisation University of Western Sydney

Project Summary

The proposed research will provide our local construction and mining industries with a much needed fast and low cost technology for geotechnical investigation of very large sites which is currently not available. The project will help steer Australia to the forefront of ambient noise research for geotechnical site investigation, in the characterisation of unsaturated compacted soil and in the determination of dynamic site characteristics which are required for seismic risk assessment. Two postgraduate students will benefit from this research by receiving research training at the highest level and it will also pave the way for exporting the technology developed overseas, particularly to our near neighbours in Asia and the Pacific.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989479 Prof MH Vickers; Dr K Barker; A/Prof RW Perry; Prof SB Dockett; Mr M Hyam

Approved Project Title **Staying on at school: strategies for increasing high school completion rates in low-retention regions of NSW**

2009 : \$ 141,000

2010 : \$ 127,000

2011 : \$ 133,000

Primary RFCD 3301 EDUCATION STUDIES

Collaborating/Partner Organisation(s)

NSW Department of Education and Training

Administering Organisation University of Western Sydney

Project Summary

Leaving school early has been shown to have detrimental effects on the life chances, well being and health of young people and their communities. Despite this, a significant portion of today's youth chooses to leave school early. Unfortunately, little is understood about the processes and factors involved in the decision to leave school, and hence schools and systems are uncertain about how to decrease dropping out. Understanding the processes and factors involved in the decision to leave school early, and identifying the basis for between-school differences, will assist in the development of programs and curricula that will be more successful in increasing retention rates, hence enhancing the skill base of Australia's youth.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

University of Wollongong

LP0989883 Dr SJ Blanksby; Dr TW Mitchell; Prof MD Willcox; Dr Z Zhao

Approved Project Title **Identifying tear lipids, their deposition onto contact lenses and their role in the development of dry eye**

2009 : \$ 101,000

2010 : \$ 101,000

2011 : \$ 101,000

Primary RFCD 3210 CLINICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Institute for Eye Research Limited

Administering Organisation University of Wollongong

Project Summary

Lipids provide a critical layer in the human tear film that retards evaporation and helps nourish and protect the eye. We will identify the molecules within this essential "oil slick" to better understand dry eye syndrome and the discomfort associated with wearing contact lenses. This may lead to new treatments for dry eye and novel technologies that provide greater comfort for the ~120,000 Australians who wear contact lenses. This collaborative research directly supports the mission of a respected non-profit organisation (Institute for Eye Research) and will train scientists in world-leading analytical technologies that are essential to Australia's emerging biotechnology industries.

LP0989352 Prof SX Dou; A/Prof X Wang; Prof CD Cook; Prof EW Collings; Dr J Yoo; Mr X Xu

Approved Project Title **Magnesium diboride superconductor magnets for applications**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2914 MATERIALS ENGINEERING

Collaborating/Partner Organisation(s)

Hyper Tech Research Inc

R&D Ceter

Zenergy Ltd

Administering Organisation University of Wollongong

Project Summary

The proposed development of magnesium diboride magnets is one of the core technologies that underlie applications in magnetic resonance imaging, magnetic separators, and other devices. The proposed international research consortium is in a leading position to explore the potential of these superconductor magnets for various applications. A breakthrough in the current proposal will lead to widespread commercial activities in a number of industry sectors: mineral separation, health, electric power, transportation, water purification, drug delivery, and space/aviation. Application of the proposal's outcomes will lead to enormous energy savings and environmental benefits.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989266 Prof GG Wallace; Dr J Chen; Dr Al Minett; Dr AT Harris; Dr P Aitchison

Approved Project Title **Nanostructured Carbon Electrodes**

2009 : \$ 110,000

2010 : \$ 110,000

2011 : \$ 130,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

CAP-XX (Australia) Pty Ltd

Administering Organisation University of Wollongong

Project Summary

The development of higher capacity energy storage devices is critical to the efficient use of energy. The fundamental knowledge gained in this project will enable the production of the next generation advanced electrode materials for this purpose and hence provide many new commercial opportunities for Australian industry. The project brings together world leaders in their own fields to address a highly multidisciplinary area of research and will provide an excellent training for PhD students and post doctoral Research Fellows, enabling them to work in and contribute to the development of new nanotechnology industries in Australia.

LP0989134 A/Prof G Wang; Dr D Wexler; Dr J Horvat; Prof C Zhang; Dr H Kim

Approved Project Title **Novel lithium iron based olivine phosphates as cathode materials for the development of new generation power batteries**

2009 : \$ 125,000

2010 : \$ 130,000

2011 : \$ 130,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BEZEL Science & Technology Australia Pty Ltd.

Daejung Energy Materials Co., Ltd.

Administering Organisation University of Wollongong

Project Summary

Global warming and climate change are a serious threat to our society today. We must reduce greenhouse gas emissions by using renewable energy for sustainable development. Battery technology is regarded as one of the green technologies that can be widely used to power vehicles and store energy. This project will develop new generation lithium-ion power batteries using novel lithium iron based phosphate cathode materials. The success of the research will provide advanced rechargeable batteries for electric bicycles, electric motorcycles and hybrid electric vehicles, contributing to the reduction of CO2 emissions.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Victoria

Deakin University

LP0989182 A/Prof F Mansouri; Prof Z Skrbis; Dr S Francis; Ms C Guerra

Approved Project Title **Social Networks, Belonging and Active Citizenship among Migrant Youth in Australia**

2009 : \$ 71,000

2010 : \$ 93,000

2011 : \$ 93,000

2012 : \$ 60,000

Primary RFCD 3701 SOCIOLOGY

Collaborating/Partner Organisation(s)

The Australian Red Cross

The Centre for Multicultural Youth Issues

Administering Organisation Deakin University

Project Summary

This project will focus on youth from three Australian migrant communities at the centre of recent debates about migrant integration, intercultural conflict and social cohesion. It will investigate the role of formal and informal networks in creating among migrant youth a sense of belonging to the mainstream society. The project redresses a critical gap in popular and official understandings of the social fabric of Australia and will provide benchmark data for improved government and community services in the area of migrant youth. It will examine and assess the role of social networks in informing young people's sense of belonging and active participation in the community of citizens.

LP0989307 Prof MP McCabe; A/Prof DJ Mellor; Dr TE Davison; Prof Dr K George; Mr G Karantzas

Approved Project Title **Evaluation of a Training Program for Staff to Recognize Depression Among Aged People Living in Residential and Community Care**

2009 : \$ 90,000

2010 : \$ 82,000

2011 : \$ 83,000

Primary RFCD 3801 PSYCHOLOGY

Collaborating/Partner Organisation(s)

benetas

Uniting Aged Care

Administering Organisation Deakin University

Project Summary

Depression is a significant problem among older people, and is likely to increase in prevalence with the aging of the population. A large percentage of depressed older people fail to receive treatment because their depression is not diagnosed. This illness leads to high economic and social costs if it is not diagnosed and treated. This project will evaluate the effectiveness of a training program to assist carers to detect depression, and so refer older people for treatment of this condition.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989299 Dr GF Ottmann; Dr C Laragy; Ms JH Allen; Dr GM Naughtin

Approved Project Title **Towards Community Aged Care Reform: Design and evaluation of a seamless, flexible service model**

2009 : \$ 96,000

2010 : \$ 95,000

2011 : \$ 104,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Uniting Care Community Options UCCO

Alzheimer's Australia VIC

Brotherhood of St. Laurence

Carers Victoria

Council on the Ageing COTA

Helen Macpherson Smith Trust

Administering Organisation Deakin University

Project Summary

The project will develop and test a seamless and flexible community aged care model that is more responsive to consumer needs. To be rolled out by Uniting Care Community Options in its community aged care operations, it is expected that the project will raise consumer satisfaction, service quality, and health outcomes. The project will also explore the potential of pooled funding focusing on its potential to resolve major service gaps that result from the complexity of current funding arrangements. Moreover, the project will generate new scientific evidence regarding the viability of consumer-directed community aged care in Australia and establish an ongoing research program.

LP0989820 Prof X Wang; Dr L Wang; Dr T Lin; Dr H Yu

Approved Project Title **The Properties and Processing Performance of Ultrasonically Cleaned Wool Fibres**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2903 MANUFACTURING ENGINEERING

Collaborating/Partner Organisation(s)

Shangdong Ruyi Woolen Textile Co Ltd

Administering Organisation Deakin University

Project Summary

Australian wool production is a \$2.5 billion export industry, and about 70% of Australian wool is exported to China for further processing. Scouring or wool cleaning is the first critical step in the processing chain, which has come under increasing pressure to reduce water and energy consumption and effluent discharge. Assisting leading wool processors in the research and development of the latest wool processing technologies is of direct benefit to the wool production industry in Australia.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

La Trobe University

LP0989149 Prof SM Gifford; Dr R Wilding; Mr J Smithies; Ms V Guglielmo; Mr A Garton; Ms MM Danckert

Approved Project Title **Home Lands: Displaced youth and the development of positive transnational identities in a supportive local context**

2009 : \$ 83,000
2010 : \$ 100,000
2011 : \$ 135,000
2012 : \$ 25,000

Primary RFCD 3705 DEMOGRAPHY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Cultural Development Network
City of Melbourne
Centre for Multicultural Youth Issues
APC.AU LTD

Administering Organisation La Trobe University

Project Summary

Home Lands will provide insights into how service providers working with refugee youth can best capitalise on the existing skills and knowledge of displaced youth to assist them in developing positive identities and futures. This will facilitate more positive relationships between refugee youth and the Australian community, and enable Australia to more quickly benefit from the existing cultural and social capital of new arrivals who currently experience marginalisation. The investigation of the process will also contribute to improved community development and refugee service delivery.

LP0989188 Reader DE Kirkby; Prof D Altman; Prof DR Walker; Dr AM Garner

Approved Project Title **A Study of the Fulbright Program in Australia 1949-2009**

2009 : \$ 78,591
2010 : \$ 78,591
2011 : \$ 78,591

Primary RFCD 4301 HISTORICAL STUDIES

APDI Dr AM Garner

Collaborating/Partner Organisation(s)

Australian-American Educational Foundation (Fulbright Commission)
National Library of Australia

Administering Organisation La Trobe University

Project Summary

This history of the Fulbright Program of educational exchange between Australia and the USA will explore a significant and undervalued aspect of the post-war relationship between the two countries. It will enhance our understanding of the sources of innovative ideas and their transfer, by investigating whether the 2600 Australian Fulbright scholars since 1949 were influential in re-orienting local research practice and public policy initiatives along US models. It will broaden awareness of the Fulbright Program's place in the Australian experience of globalisation, and contribute to a critical understanding of cultural diplomacy as a key feature of foreign policy.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989224 Prof TA Murray; Dr CH Smith

Approved Project Title **A Historical archaeology of the Commonwealth Block 1850-1950**

2009 : \$ 94,000
2010 : \$ 94,000
2011 : \$ 26,140

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Museum Victoria

Administering Organisation La Trobe University

Project Summary

This project has three benefits. First, it will help Australians understand more about the richness and diversity of urban experience in our nation, thereby enhancing the heritage value of Museum collections drawn from urban archaeological sites. Second, transnational approaches to the archaeology of the modern world, with their focus on the movement of people, capital and technology will improve our understanding of the consequences of migration, and of the creation of global economies and local identities. Last, it will enrich the social and cultural histories of Australia through a deeper and closer integration of archaeological and written historical information.

LP0989988 Prof RW Parish

Approved Project Title **A novel reversible male sterility system for hybrid seed production in canola, cotton and oilseed mustard**

2009 : \$ 120,000
2010 : \$ 96,000
2011 : \$ 120,000
2012 : \$ 60,000

Primary RFCD 3002 CROP AND PASTURE PRODUCTION

Collaborating/Partner Organisation(s)
PACIFIC SEEDS PTY. LTD.

Administering Organisation La Trobe University

Project Summary

Demand for grains, fibre and other agricultural products has recently increased significantly. Hence, the security of food production is emerging as a critical global issue. We have identified a central component (AtMYB103) controlling tapetum and thus pollen development and designed a novel reversible male sterility system using AtMYB103. The efficient hybrid seed production systems developed in this project for canola, cotton and mustard will increase the productivity of the Australian oilseed and fibre industries. AtMYB103 gene is conserved among many crop plants. Hence, the new technologies and knowledge gained will be applicable to a wide range of crop plants and have important implications for the agricultural and food industries.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Monash University

LP0989415 Dr A Bouazza; Dr WP Gates; Prof RK Rowe

Approved Project Title **Improved Landfill Barrier Design for Changing Climates**

2009 : \$ 52,280

2010 : \$ 52,280

2011 : \$ 52,280

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Geofabrics Australasia Pty. Ltd.

Clayton Road Joint Venture

Administering Organisation Monash University

Project Summary

The proposed research project will develop advanced methods and guidelines for practising engineers for improved engineering and design of waste containment barrier systems, leading to improved protection of groundwater resources and the environment and sustainable development of the country. The project will contribute to the priority area of building an environmentally sustainable Australia with a specific focus on water as a critical resource.

LP0989340 Prof RL Boyd; Dr A Michalska; A/Prof MA Kirkland

Approved Project Title **Application of direct protein transduction of Stem Cell Factors to reprogram mouse and human somatic cells into pluripotent stem cells**

2009 : \$ 200,000

2010 : \$ 220,000

2011 : \$ 220,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Cytomatrix Pty. Ltd.

Administering Organisation Monash University

Project Summary

This project aims to generate embryonic stem cell-like cells from human somatic cells, using direct protein transduction of defined factors, rather than through retroviral delivery. This will bring stem cell application closer to a therapeutic setting. The cells produced will be free from genetic modification and will yield products for patient-specific cell-based therapies that will be accepted by recipients without the need for immunosuppressant therapy. This development is expected to revolutionize the current approach to treating disease and injury, and is likely to result in the generation of highly marketable potent cell reprogramming therapeutics.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989714 Dr KA Coghill; Dr R Donohue; Dr PJ Holland; A/Prof CH Lewis; The Hon KR Rozzoli; Ms Y Smith; Mr AM Richardson; Prof GH Hassall

Approved Project Title **Parliamentary Careers: Design, Delivery and Evaluation of Improved Professional Development**

2009 : \$ 61,000

2010 : \$ 92,000

2011 : \$ 78,000

Primary RFCD 3601 POLITICAL SCIENCE

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AusAID

Inter-Parliamentary Union

Administering Organisation Monash University

Project Summary

National/community benefits arise from improved design, delivery and evaluation of professional development programs for parliamentarians, thereby enhancing their central constitutional roles in making laws, approving budgets and holding government policy and administration to account. This innovative cross-disciplinary project generates theoretical and practical understanding concerning the duration, content and learning modes of parliamentarians' professional development programs. Australian assistance programs to parliaments in the Pacific will have improved design, delivery and evaluation and be more effective in improving parliamentary performance, national governance and enhanced political stability in Australia's region.

LP0989435 Prof PM Collier

Approved Project Title **Developing a Resource Allocation Framework to support more effective police investigations of major crime**

2009 : \$ 31,000

2010 : \$ 38,000

2011 : \$ 35,000

Primary RFCD 3501 ACCOUNTING, AUDITING AND ACCOUNTABILITY

Collaborating/Partner Organisation(s)

Victoria Police Crime Department

Administering Organisation Monash University

Project Summary

The project addresses National Research Priority 4: Safeguarding Australia. This priority has a goal to protect Australia from terrorism and crime. Improving resource allocation decisions will enable police resources to be more effective in detecting and preventing crime. The project addresses the goal of all police agencies to reduce crime by enhancing the capability to manage resources more efficiently and effectively. This requires a more innovative culture that uses the available management information intelligently to make better (in terms of outcomes) resource allocation decisions.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989160 Dr LL Dawson; Dr VM Plummer; A/Prof J Fisher; Dr AP Howard; Mr RM Ribbons; Mrs TM Harlem
Approved Project Title **Enhancing patient management at point of care using electronic-based clinical pathways**
2009 : \$ 50,000
2010 : \$ 35,000
Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

NEC Business Solutions
Peninsula Health
Fraser & Jenkinson P/L trading as Print Media Group
Administering Organisation Monash University

Project Summary

Clinical pathways have been adopted by most Australian hospitals and the development of a 'proof of concept' digitised clinical pathways management system (DCPMS) would provide significant benefits to the Australian healthcare system in improving the efficiency of this approach. These include improved outcomes of care arising from a better match of patient requirements to nursing care and other health resources and better management of resources where savings can be re-directed into front-line patient care. This Australian innovation can then be exported to international health systems that are increasingly turning to hospital funding models that utilise clinical pathway information.

LP0990059 A/Prof J Etheridge; Dr C Dwyer; Dr PC Tiemeijer; Dr MA van der Stam
Approved Project Title **A Method to Characterise an Aberration-Corrected Electron Wave Field - a step towards quantitative electron microscopy**
2009 : \$ 72,000
2010 : \$ 82,000
Primary RFCD 2499 OTHER PHYSICAL SCIENCES

Collaborating/Partner Organisation(s)

FEI Company
nanoTechnology Systems
Administering Organisation Monash University

Project Summary

Australia has recently invested in a powerful, new electron microscope, one of the first in the world, which can image features at the atomic scale that could not be seen before. This project will forge a strategic partnership with the designer and the distributor of this microscope, to develop special new methods that will further increase the microscope's imaging power. This will give Australian scientists unique capabilities with which to investigate and engineer new materials for advanced technological applications and it will train young Australian scientists in these cutting-edge techniques.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989469 A/Prof J Fisher; Dr C Lang; A/Prof HJ Forgasz; Mrs A Craig; Ms RT Ellul; Ms B Harlos

Approved Project Title **Digital Divas: Designing approaches to enthuse girls' interest in ICT studies and ICT careers**

2009 : \$ 102,000
2010 : \$ 80,000
2011 : \$ 87,000

Primary RFCD 3301 EDUCATION STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Education and Early Childhood Development
VicICT for Women Network
Australian Computer Society
Netspace Online Systems
Brentwood Secondary College

Administering Organisation Monash University

Project Summary

A strong information and communications technology (ICT) industry, a skilled ICT workforce and excellence in ICT research is vital to Australia's future. However, girls' interest in ICT, and the numbers of women entering the ICT workforce, are at record lows, while Industry skills are critically short. Digital Divas will pioneer a program to build girls' ICT skills and confidence, increasing their motivation to study ICT and enter the ICT workforce. The benefits of education will be maximised by addressing the gender digital divide evident in classrooms, universities and professions.

LP0989823 Prof GB Garnier; Dr WJ Batchelor; Dr W Shen; Prof PA Webley; Prof GP Simon; Dr P Stuart

Approved Project Title **Novel Cellulosic Products and Sustainable Bioresource Engineering**

2009 : \$ 225,000
2010 : \$ 220,000
2011 : \$ 215,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 4

Collaborating/Partner Organisation(s)

Visy Packaging & Recycling
Amcor Australasia
Australian Paper
Norske Skog
SCA Hygiene Australasia

Administering Organisation Monash University

Project Summary

The paper industry is a key industry in the Australian economy and particularly in rural and regional Australia. 6000 people are employed directly by the paper manufacturing companies and many thousands more employed in providing services and inputs to the industry. This grant aims to assure the future of the industry by developing standards to measure the environmental impact; by using these standards and innovative materials to greatly reduce the environmental impact of the industry; and by developing new highly profitable products for the industry including a lightweight corrugated box that won't sag when wet, a paper-mineral composite to capture and store green house gases.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989157 A/Prof DR Honnery; Mr A de Bono; Dr PH Dayawansa

Approved Project Title **Innovative and human-centred design in underground coalmining: a new concept vehicle for safe personnel transport**

2009 : \$ 120,000

2010 : \$ 120,000

Primary RFCD 4104 DESIGN STUDIES

Collaborating/Partner Organisation(s)

Kestrel Coal Pty Ltd

PJ Berriman & Co Pty. Ltd

Administering Organisation Monash University

Project Summary

Australian coalminers commute daily on a system of underground roads to the 'longwall', the site where their work can begin, in vehicles that are primitive by aboveground standards. These current vehicles contribute to short- and long-term injuries amongst mining personnel. This project will develop benchmark standards for an innovative underground personnel carrier that promotes a safer and healthier working environment by contributing to reduced injury rates and ensuring the comfort of workers. This project contributes to the health and welfare of coalminers in regional Australia and in the international mining sector through innovative and 'human-centred' design.

LP0989355 Dr NC Karmakar; Dr YD Vashishtha

Approved Project Title **Smart Information Management of Partial Discharge in Switchyards using Smart Antennas**

2009 : \$ 120,000

2010 : \$ 107,000

2011 : \$ 107,000

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

SP Ausnet

Administering Organisation Monash University

Project Summary

Currently no single robust technology for partial discharge (PD) detection, location and unique identification of faulty power apparatus is commercially available. The proposed method will bring a new technological breakthrough in the market for PD monitoring, management and prevention. On-line real time fault detection and monitoring system of expensive power installations will save significant revenue for power industries in Australia and worldwide. This real time monitoring system will also give Australia a leading edge technological advantage over overseas competitors.

LP0989652 Dr NC Karmakar; Dr GF Swiegers

Approved Project Title **Printable Multi-Bit Radio Frequency Identification for Banknotes**

2009 : \$ 250,000

2010 : \$ 180,000

2011 : \$ 180,000

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

SatNet Pty Ltd

Securrency International Pty Ltd

Administering Organisation Monash University

Project Summary

This project will investigate inexpensive radio-frequency transponders on banknotes that enjoy all of the advantages of, and, indeed, operate in a manner somewhat similar to barcodes. Transponders of this type may potentially replace barcode technology, thereby allowing automated identification of individual banknotes at multiple points in transaction chains. The resulting efficiencies in banknote authentication and other applications will generate a significant economic benefit for Australia. Additionally, the development of state-of-the-art transponders based on fundamental microwave- and antenna engineering prospectively gives Australia a cutting-edge advantage as a leading player in the fast-growing RFID market.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989455 Dr RY Lapovok; Dr I Timokhina; Prof PD Hodgson; Prof LS Toth; Mr D Bhattacharjee

Approved Project Title **Enhanced Mechanical Properties of Steel Sheet through Novel Approach in Asymmetric Rolling**

2009 : \$ 100,000
2010 : \$ 100,000
2011 : \$ 100,000

Primary RFCD 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Laboratoire de Physique et Mécanique des Matériaux
Tata Steel Limited

Administering Organisation Monash University

Project Summary

Steel sheet production is one of the major industries in Australia, which impacts the automotive and construction industries. There is an ongoing requirement to increase the strength of steel sheet without compromising ductility, which improves the strength / weight ratio and the automobile fuel efficiency. The novel rolling process proposed has the potential to address these requirements. The industrial partner Tata Steel is a global steelmaker who has strategic partnerships with Bluescope Steel in Australia. The technology to be developed will be exploited both overseas and within Australia and assist in bringing Australia to a leading position in this area of research.

LP0989246 Prof JJ Loughran; Dr AK Berry; A/Prof DJ Corrigan; Mr S Keast; Dr I Mitchell

Approved Project Title **Engaging science students' hearts and minds: Researching science teachers' professional learning in the development of contemporary understandings of scientific literacy**

2009 : \$ 108,000
2010 : \$ 88,000
2011 : \$ 102,000

Primary RFCD 3303 PROFESSIONAL DEVELOPMENT OF TEACHERS

Collaborating/Partner Organisation(s)
Catholic Education office

Administering Organisation Monash University

Project Summary

This project will develop, support and value the work of science teachers in developing students' scientific literacy and share the subsequent knowledge gains in the educational community to positively advance quality teaching and learning in school science. Improving science teaching and learning hinges on offering new ways of responding to the problems inherent in teaching science in the 21st century. By supporting and encouraging the creative and innovative ideas, concepts and approaches to quality science teaching and learning embedded in teachers' professional learning the development of the critical knowledge for challenging the status-quo will be advanced.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989429 Prof BF Oldenburg; Prof V Lin; Dr C Joyce; Prof K Eagar; A/Prof P Dugdale; Prof L Segal; Dr AJ Mutch; Prof JF Hartz-Karp; Prof CA Gericke; Mr MJ Tennant; Mr R O'Donoghue; Dr D Panter

Approved Project Title **Citizen engagement: Listening to citizens' views about Australia's health system and prevention**

2009 : \$ 90,000
2010 : \$ 80,000
2011 : \$ 80,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Health, South Australia
Queensland Health
ACT Health

Administering Organisation Monash University

Project Summary

This project will yield new and important perspectives from citizens on preventive health and health promotion, which can be used to develop better targeted and more effective prevention and promotion policies and strategies. Citizens views will be investigated in relation to vexed issues such as: new approaches to financing and program delivery, reorienting the health insurance sector, reorienting the health system to focus more on prevention and health promotion, improving current approaches of consumer participation in prevention and chronic disease management, tackling broader issues in public policy trade-offs between health and non-health, diversifying workforce roles and involving health professionals in prevention and promotion.

LP0989603 Dr A Peeters; Dr M de Courten; Mr SA Bilsborough

Approved Project Title **Global Corporate Challenge Evaluation: The evaluation of a low-cost, low-impact physical-activity workplace intervention**

2009 : \$ 40,000

2010 : \$ 35,000

2011 : \$ 38,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Global Corporate Challenge

Administering Organisation Monash University

Project Summary

Societal increases in obesity and physical inactivity have led to consideration of workplace interventions as a potential for improving health. However, long-term evaluations of such interventions are rare. Here we will evaluate the Global Corporate Challenge (GCC), which engages employees to participate in a four month pedometer-based program aimed at increasing their physical activity levels. We will follow 1000 participants for two years to determine the short and long-term health benefits of the program and to provide insight into factors that may improve the success of such programs. Such findings are essential for appropriate government and industry policy decisions in this area of chronic disease prevention.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989237 Prof JC Sarros; Dr AE Rafferty

Approved Project Title **Determinants, processes and outcomes of executive coaching**

2009 : \$ 61,000

2010 : \$ 47,000

2011 : \$ 53,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

Collaborating/Partner Organisation(s)

Executive Central Group Pty Ltd

Administering Organisation Monash University

Project Summary

Research suggests that executive leaders in organisations have a critical impact on the long-term viability of organisations. This research program aims to contribute both to the theory and practice of executive coaching, which is an important leadership development tool. Our research will provide evidence on how to design coaching so as to maximize the likelihood of effective outcomes, and will also identify workplace and individual characteristics that influence the likelihood that this leadership development activity will be successful. This research program will provide a stronger theoretical and empirical foundation for executive coaching.

LP0989518 Dr JD Stilwell

Approved Project Title **A highly resolved chronostratigraphic and palaeoenvironmental framework for Pre-Salt Brazilian core basins**

2009 : \$ 220,000

2010 : \$ 150,000

2011 : \$ 100,000

Primary RFCD 2601 GEOLOGY

Collaborating/Partner Organisation(s)

Shell International Exploration and Production Inc.

Administering Organisation Monash University

Project Summary

Hydrocarbon production and exploration today support viable economies. The engagement of industry with higher learning institutions will advance and enhance the discipline of petroleum geology, with a resultant spectrum from new sources of oil and gas to significantly reducing CO2 emissions (and decreasing the impact of global warming). National and community benefits are diverse: training and research support for many graduate students and staff in Australia, a better understanding of ancient greenhouse climates, testing and refinement of new techniques (e.g. bioevents, biosteering) in petroleum studies and practical experience of integrating data from frontier exploration wells.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990038 Dr RM Thompson; A/Prof J Beringer; Dr TR Cavagnaro; Prof RC Mac Nally; Dr PJ Baker; Mr M Eigenraam; Mr L Metzeling

Approved Project Title **More bang for your carbon buck: carbon, biodiversity and water balance consequences of whole-catchment carbon farming**

2009 : \$ 128,000

2010 : \$ 150,000

2011 : \$ 150,000

2012 : \$ 140,000

2013 : \$ 140,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Landcare CarbonSMART
 Goulburn Broken Catchment Management Authority
 Kilter Pty Ltd
 Department of Sustainability and Environment
 EPA Victoria
 NCCMA
 Department of Sustainability and Environment - River Health Division

Administering Organisation Monash University

Project Summary

Farming carbon via tree plantings on pasture land is becoming increasingly common to address the effects of climate change. This activity is likely to produce dramatic changes in Australia's rural landscapes, but we have little knowledge of likely effects on crucial ecosystem services and attributes such as stream water yields and biodiversity. This project will investigate the relationship between tree cover, carbon uptake, water yield and biodiversity. The outcomes will allow government agencies, landowners and carbon farming groups to better evaluate the effects of different landscape planning options and contribute to effective long-term planning for multiple goals.

LP0989139 Prof BV Weiler; Mr LD Smith

Approved Project Title **Fostering pro-environmental behaviour of zoo visitors through strategic communication**

2009 : \$ 104,731

2010 : \$ 104,731

2011 : \$ 104,731

Primary RFCD 3505 TOURISM

APA(I) Award(s): 1

APDI Mr LD Smith

Collaborating/Partner Organisation(s)

Taronga Conservation Society Australia
 Zoos Victoria
 Zoos SA
 Perth Zoo

Administering Organisation Monash University

Project Summary

A key part of achieving an Environmentally Sustainable Australia is to change human behaviour. Given annual visitation to Australia's zoos of 14.5 million, including about 4.2 million to the partner organisations, there is great potential for zoos to use their experiential platform to foster pro-environmental behaviour. How best to persuade people to change their behaviour, however, is still poorly understood. This research will improve the capacity of zoos to achieve pro-environmental behaviours among their visitors and thus have significant environmental and social benefits. Linking motivational factors with visitors' susceptibility to persuasion will assist any organisation that seeks to foster pro-environmental behaviour.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

RMIT University

LP0989756 A/Prof P Bertok; Prof Z Tari; Prof LM Batten

Approved Project Title **Privacy-Preserving Remote Access to Health Information Infrastructure in Ubiquitous Computing Environments**

2009 : \$ 90,000

2010 : \$ 85,000

2011 : \$ 80,000

Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Northern Health

Administering Organisation RMIT University

Project Summary

The project's benefits can be summarised as follows. (a) The project will provide new solutions that enable remote access to health-care data in a secure and privacy-preserving manner. (b) This will improve health care services in northern metropolitan Melbourne, and provide shorter medical response time, which is particularly important in emergency scenarios. (c) It will exemplify advanced IT support for health care, which can be utilised by other providers. (d) The project will make a direct link between IT research and its industrial application. (e) The project will also give the opportunity to a postdoctoral researcher and PhD students to perform leading edge research on privacy protection of information in an industrial environment.

LP0989314 Prof JF Fien; Prof AE Gough; Dr JR Guevara; Dr LK Wheeler; Dr JM Smith; Ms R Black; Mr E Bottomley; Mr GM Hunt; Ms J Liefman; Dr PR Weldon

Approved Project Title **Developing Effective School-Community Learning Partnerships for Sustainability**

2009 : \$ 46,552

2010 : \$ 49,090

2011 : \$ 51,888

Primary RFCD 3701 SOCIOLOGY

Collaborating/Partner Organisation(s)

Sustainability Victoria

Education Foundation Australia

Western Port Greenhouse Alliance

Association of Independent Schools Victoria

Shire of Yarra Ranges Council

Centre for Education and Research in Environmental Strategies (CERES)

Administering Organisation RMIT University

Project Summary

The research contributes to 2 areas of national concern: achieving environmental sustainability and strengthening social cohesion, especially in the expanding urban growth corridors of Australian cities. It will develop guidelines for facilitating models of community learning partnerships that build social capital as a vehicle for protecting natural capital. Knowledge generated will advance conservation practices for natural capital: water, energy, biodiversity and waste, and strengthen the school-community partnership elements of programs such as ResourceSmart and the Australian Sustainable Schools Initiative (AuSSI), supported extensively by networks of local, State and Commonwealth governments, schools and community groups.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989245 Dr E McKay; Dr JF Izard

Approved Project Title **An Intelligent Software-AGENT: Innovates Adaptive Workplace eTraining Tools**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Government Skills Australia

Neteffective Media Group

Administering Organisation RMIT University

Project Summary

Maintaining well skilled and knowledgeable employees is key to sustaining our competitive advantage through smarter information use of digital technologies. By reviewing current government training practice and IT governance, the Project Team will share valuable insight enabling multi-disciplinary collaboration for effective information systems development. Access to our individual virtual learning space is critical; this Project places Australia at the centre of virtual reality and emerging Web 2.0 technologies in the race to empower the global reach of an individual's access to adaptable eLearning tools and the unyielding intellectual thirst for new learning spaces for the next decade.

LP0989452 Prof JY Tu; Mr K Inthavong; Dr WW Yang; Prof Q Chen

Approved Project Title **Characterisation of Wood Dust Exposures and Its Effects on Respiratory Health**

2009 : \$ 78,591

2010 : \$ 78,591

2011 : \$ 78,591

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APDI Mr K Inthavong

Collaborating/Partner Organisation(s)

Airlinx Heating & Cooling Supply Pty. Ltd.

D & E Air Conditioning Pty Ltd

The Peninsula Woodturners Guild Incorporated

Administering Organisation RMIT University

Project Summary

In Australia, the wood processing industry is the second largest manufacturing industry employing around 115,000 people. Exposure and inhalation of wood dust can cause serious health effects in the human respiratory systems and considerable medical costs of over hundreds million dollars per year directly and indirectly. This project aims to undertake a comprehensive research study through the characterisation of wood dust exposures, development of predictive models for health risk assessment and optimisation of ventilation systems. The outcomes of this research may lead to improved preventative measures, reducing occupational diseases thereby cutting the socio-economic burden on the Australian community.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989424 Prof Y Xie

Approved Project Title **Optimisation of Building Structures Considering Wind Loading**

2009 : \$ 74,000

2010 : \$ 81,000

2011 : \$ 88,000

Primary RFCD 2908 CIVIL ENGINEERING

Collaborating/Partner Organisation(s)

Felicetti Pty. Ltd.

Administering Organisation RMIT University

Project Summary

Wind loading is a dominant factor that should be carefully considered and resourcefully exploited in the design of building structures. The ever-taller buildings proposed around the world have presented a major challenge and opportunity in the pursuit of new techniques and materials. The proposed research will improve the competitiveness and productivity of the Australian building design industry by establishing a cutting-edge computer-automated design tool for creating innovative building systems that can resist wind loading effectively and efficiently. The developed technology will result in significant enhancement of the performance and safety of buildings, and substantial reduction of construction materials and costs.

Swinburne University of Technology

LP0989191 A/Prof M Bhave; Dr EA Palombo; Dr JF Panozzo

Approved Project Title **New approaches for screening cereal germplasm for enhanced microbial pathogen resistance and desirable grain texture**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2702 GENETICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Primary Industries

Administering Organisation Swinburne University of Technology

Project Summary

The trait of grain hardness (texture) is of significance to the Australian infrastructure, as exports of hard wheat contribute over 5 billion dollars per year on average to the national economy and hard wheats are also important for domestic usage. The genes responsible for grain texture also impart resistance to bacterial and fungal pathogens which can cause extensive damage. However, the Australian gene pool has very limited genetic diversity in grain textures and thus possibly in pathogen resistance. The project will work out the science behind these two traits and identify lines with new variants of textures and pathogen resistances, thus greatly benefiting the national infrastructure and local primary industries.

LP0989878 Prof JD Langan-Fox; Prof CK Stough; Dr E Cunningham

Approved Project Title **Preventing Adverse Events in Hospitals**

2009 : \$ 45,000

2010 : \$ 46,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Barwon Health

Royal Adelaide Hospital: Central Northern Adelaide Health Service

Mater Adults Hospital

Administering Organisation Swinburne University of Technology

Project Summary

Our research will construct strategies and tools for preventing hospital adverse events and should develop knowledge and expertise about reducing care complications in high risk patients. This research has collaborating partners which are hospitals in Victoria, South Australia and Queensland. These form part of the preventative healthcare network with implications for the nation's social and economic fabric through their role in reducing morbidity, mortality and supporting the health of all Australians. Since acquired complications have comparable costs to the healthcare system as that of all other forms of injury combined, there will be substantial benefits to hospitals through reduced costs.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of Melbourne

LP0989620 Prof GF Browning; Dr MS Marenda

Approved Project Title **Development of an attenuated vaccine to control the emerging bovine respiratory pathogen *Mycoplasma bovis***

2009 : \$ 140,000

2010 : \$ 140,000

2011 : \$ 140,000

Primary RFCD 3004 ANIMAL PRODUCTION

Collaborating/Partner Organisation(s)

Pfizer Australia Pty Limited

Administering Organisation The University of Melbourne

Project Summary

The project will develop an attenuated vaccine to control the emerging bovine respiratory pathogen *Mycoplasma bovis*. This pathogen is a major contributor to bovine pneumonia in the feedlot industry and improved control will reduce reliance on antibiotics in cattle production.

LP0989900 A/Prof R Buyya

Approved Project Title **Service Level Agreement (SLA)-oriented Resource Allocation for Data Centers and Cloud Computing Systems**

2009 : \$ 65,000

2010 : \$ 65,000

2011 : \$ 65,000

Primary RFCD 2803 COMPUTER SOFTWARE

Collaborating/Partner Organisation(s)

Platform Computing Singapore Pte Ltd

Administering Organisation The University of Melbourne

Project Summary

In the next 20 years, service-oriented computing will play an important role in shaping the industry and the way business is conducted and services are delivered and managed. This paradigm will have major impact on service economy, which contributes significantly towards Australia's GDP. The service sector, which includes health, financial, and government services, involves significant interaction between clients and providers. With increasing dependency on ICT technologies in their realization, major advances are required in service-driven allocation of resources to competing applications. This project develops technologies for Service Level Agreement (SLA)-based allocation of Data Center/Cloud computing system resources to applications.

LP0989525 A/Prof D Chen; Dr JR Freney; Dr RB Edis; Prof H Di; Prof X Yan; Dr W Wang; Dr I Cartwright; Mr CN Walker

Approved Project Title **Enhanced efficiency fertilisers for agricultural sustainability and environmental quality**

2009 : \$ 78,420

2010 : \$ 78,420

2011 : \$ 78,420

Primary RFCD 3001 SOIL AND WATER SCIENCES

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

Incitec Pivot Ltd

Jiangsu Juhui Technologies Ltd

Administering Organisation The University of Melbourne

Project Summary

Expected benefits will come from reduced environmental impact and improved profitability of farming. These include: demonstrably reduced emissions of nitrogen gases (nitrous oxide (a greenhouse gas), nitric oxide (ozone active), and ammonia (a pollutant and secondary greenhouse gas); less nitrate leaching, soil acidification and nitrogen contamination of water resources; increased flexibility in timing and method of fertiliser application; reduced requirement for nitrogen fertiliser, and; helping farmers adapt to future climatic and elevated CO2 conditions. These outcomes will significantly improve and help protect the future financial and environmental conditions of rural Australia, and improve our national greenhouse account.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989375 Prof CS Fraser

Approved Project Title **Enhanced Automation of Close-Range Photogrammetry for Defence and National Security Applications**

2009 : \$ 99,000
2010 : \$ 95,000
2011 : \$ 90,000

Primary RFCD 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
 Defence Imagery & Geospatial Organisation

Administering Organisation The University of Melbourne

Project Summary

The project, which falls under the National Research Priority of safeguarding Australia, will be of significant national and community benefit. The research outcomes will advance close-range photogrammetry (CRP) technology, especially in the critical areas of defence and national security. It will lower the cost base of CRP and expand its commercial potential in new application domains, thus promoting business activity in the broader Australian spatial information industry. Also, community oriented benefits will be seen through the improved prospects for new public-good applications of CRP, ranging for example from cultural heritage recording through to homeland security and forensic measurement for crime scene analysis.

LP0989203 A/Prof SJ Gallagher; Prof DJ Cantrill; Dr MW Wallace

Approved Project Title **The climate evolution of high latitude 140 to 90 million year old hydrocarbon prospective strata of Southeast Australia**

2009 : \$ 80,000
2010 : \$ 70,000
2011 : \$ 70,000

Primary RFCD 2606 ATMOSPHERIC SCIENCES

Collaborating/Partner Organisation(s)
 Lakes Oil N.L.
 Nexus Energy Limited
 Geotrack International Pty Ltd

Administering Organisation The University of Melbourne

Project Summary

Melbourne University and the Royal Botanic Gardens will collaborate with three companies to investigate climate variability in a 140 to 90 million year old greenhouse record in southeast Australia. Spore, pollen & algal studies integrated with wood & plant analyses and zircon dating will improve age estimates of hydrocarbon reservoirs in Gippsland where Lakes Oil and Nexus Energy are exploring in one of Australia's premier oil & gas producing regions. This work will lead to a better understanding of climate change in long-term greenhouse conditions. Knowledge of this in the past is critical to prediction of climate change into the future

LP0989598 Prof D Gardner; Dr J Rathjen; Dr D Sakkas

Approved Project Title **Metabolic Profiling of Human Embryonic Stem Cells**

2009 : \$ 113,000
2010 : \$ 110,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating/Partner Organisation(s)
 Molecular Biometrics, LLC,

Administering Organisation The University of Melbourne

Project Summary

Stem cell therapies are becoming a commercial reality. Stem cell products have an estimated value of US\$ 87 million this year and are predicted to be worth US\$ 8.5 billion within a decade. Development of stem cell products will be an international research effort with many contributing to the final products. Research described here will augment this effort, strengthening Australia's contribution by developing novel intellectual property and applications. The training of individuals skilled in stem cell research will add to Australia's pool of stem cell researchers. Individuals trained in this area will be paramount to maintaining Australia's research effort and in the application of these technologies into the Australian health sector.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989137 Prof RB Gasser; Dr I Beveridge

Approved Project Title **Catchment sources of microorganisms - developing an integrated strategy for the sustained prevention of waterborne disease outbreaks in humans in Melbourne**

2009 : \$ 192,000

2010 : \$ 187,000

2011 : \$ 259,000

2012 : \$ 192,000

Primary RFCD 3005 VETERINARY SCIENCES

Collaborating/Partner Organisation(s)

Melbourne Water Corporation

Administering Organisation The University of Melbourne

Project Summary

This project will develop a quality scientific and technological program in national priority areas, leading to strong basic research and development of new concepts. It will enhance collaborative links between academia and industry as well as between basic and applied research. Development of pan-Australian collaboration will result in a more efficient use of resources in national and international contexts; enhance the skills-base in biology, biotechnology and bioinformatics; and increase global visibility potentially increasing investment in Australian science. It will result in improved surveillance and prevention of waterborne diseases; providing tangible outcomes with benefits to the water industry in regional and rural communities.

LP0989892 Prof DA Gray; Prof W Moran; Dr MR Morelande; Dr C McCarroll; Dr PT May; Prof DJ McLaughlin; Adj/Prof BD Bates

Approved Project Title **Towards Distributed Phased Array Radar for High Resolution Weather Monitoring**

2009 : \$ 250,000

2010 : \$ 260,000

2011 : \$ 210,000

Primary RFCD 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Raytheon Australia

Administering Organisation The University of Melbourne

Project Summary

Several recent reports on climate change by leading international and national bodies forecast that the rate of weather hazards such as storms and wind-shear, and of weather-associated phenomena such as bush fires will increase over the next 40 years. The current technology for monitoring weather events, and effects like wind-shift, which has a serious impact on dangers associated with bush fires, has significant weaknesses. We will deliver considerable improvements in monitoring capability by developing the technology for using a network of small phased array radars. We aim to place monitoring resources where end-user needs are greatest.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989665 A/Prof KL Hegarty; Prof CF Humphreys; Dr N Mudaly; Dr WR Roberts

Approved Project Title **Safety and resiliency at home: voices of children who live with fear**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Berry St

Administering Organisation The University of Melbourne

Project Summary

Finding out what can help children feel safer who are currently living in households where there is family violence will enable early intervention for better outcomes for such children. This research is significant because it will focus on targeting appropriate responses by listening to the views of children themselves and hence finding out what is really helpful for them to build resiliency. This is important to the work of a key family welfare agency (Berry St) but it also has benefit for health and welfare workers throughout Australia. Appropriate early intervention will not only help the families concerned but will strengthen Australia's economic and social fabric, a priority goal of the national research agenda.

LP0989324 Prof AA Hoffmann; Dr V Pettigrove; Mr L Metzeling; Dr ME Carew

Approved Project Title **Molecular biosignatures for isolating pollution problems in aquatic ecosystems using macroinvertebrate bioindicators**

2009 : \$ 107,000

2010 : \$ 101,000

2011 : \$ 100,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APDI Dr ME Carew

Collaborating/Partner Organisation(s)

Melbourne Water Corporation

Environment Protection Authority Victoria

Administering Organisation The University of Melbourne

Project Summary

Aquatic ecosystems are under increasing threat by human activities. This has been further exacerbated by drought and climate change. In the future, understanding the major factors impairing aquatic ecosystems will be a vital part of sustaining water resources. This project develops new molecular tools to better monitor and assess aquatic pollution. We will develop a new high-tech deoxyribonucleic acid (DNA) approach to identify insect indicator species and combine this with a field-based microcosm method that uses local aquatic insects to isolate pollution effects from other impacts. This proposal will facilitate fast identification of pollution problems and provide the water industry with an innovative means to assess pollution and monitor remedial actions.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989331 Prof AC Jackson; Prof SA Thomas; Dr N Dowling; Dr ME Bellringer; Prof MW Abbott; A/Prof J Koziol-McLain; Dr JL Patford

Approved Project Title **Family Violence and Problem Gambling in Help-Seeking Populations: Prevalence, Comorbidity, Impact and Coping**

2009 : \$ 71,000

2010 : \$ 57,000

2011 : \$ 63,000

Primary RFCD 3702 SOCIAL WORK

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Drummond Street Relationship Centre

NIU Development Inc

New Zealand Ministry of Health

Problem Gambling Foundation of New Zealand

Administering Organisation The University of Melbourne

Project Summary

The impetus for the current proposal emerged from concern expressed by the Partner Organisations (service providers) regarding the high levels of co-occurrence of problem gambling and family violence reported by their service users. The primary expected national benefits include informing the development of effective screening protocols at the Partner Organisations and other problem-specific community-based services. It will provide an evidence base to assist these organisations to design effective prevention programs and innovative and integrated individual and family services to reduce family impacts and enhance family coping. The project will contribute to the national priority area of promoting and maintaining good health.

LP0989536 A/Prof LB Joubert; A/Prof D Ames; A/Prof EA Ozanne; Ms S Posenelli; Dr MF Gerdtz

Approved Project Title **From Suspicion to Intervention : Improving responsiveness to abuse of the elderly in acute and sub-acute health care.**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 3210 CLINICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

St Vincent's Health

Administering Organisation The University of Melbourne

Project Summary

Early identification of risk and an integrated multidisciplinary response across the health service would be effective in responding to the multiple and complex behavioural and social issues which contribute to aged abuse as it presents in emergency, acute and sub-acute care, but are currently often ignored in health services and the literature. We propose that effective use of this "window of opportunity in health care" could extend the level of community response to this vulnerable group of people.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989575 A/Prof SE Kentish; Prof GW Stevens

Approved Project Title **The Treatment Of Galvanizing Wastewater: Delivering An Environmentally And Economically Sustainable Approach.**

2009 : \$ 46,000

2010 : \$ 35,000

2011 : \$ 40,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Industrial Galvanizers

Administering Organisation The University of Melbourne

Project Summary

This project will investigate a process to treat wastewater from industrial galvanizing sites around Australia. When implemented, the process will substantially reduce the consumption of acid and fresh water at these sites. Further, the process will recover the zinc content of the wastewater in a saleable form and can also generate ferric chloride for sale as a water treatment chemical. The quantity of heavy metals disposed to landfill will also be dramatically reduced. Scientific knowledge of multicomponent liquid-liquid equilibria will be of value to a wider range of solvent extraction processes including zinc and copper metal refining.

LP0989449 A/Prof SD Kolev; Prof RW Cattrall; Mr LD Dunn; Mrs J Hendy

Approved Project Title **The Application of Polymer Inclusion Membranes for the Removal of Thiocyanate and Cyanide from Gold Ore Processing Wastewaters**

2009 : \$ 72,000

2010 : \$ 80,000

2011 : \$ 90,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Collaborating/Partner Organisation(s)

Stawell Gold Mine - Northgate Australian Ventures Corp. Pty. Ltd.

Administering Organisation The University of Melbourne

Project Summary

The recovery of gold at Stawell Gold Mine can be improved by using cyanide and thiocyanate free water in the milling process. The aim of this research is the development of a novel separation technology for the removal of these two ions from mine wastewater to allow it to be recycled. Novel polymeric materials, known as polymer inclusion membranes (PIMs), which have never been used before in industrial separation, will be at the centre of this technology. In addition to increasing gold recovery, this technology is expected to reduce substantially the reliance of the Australian goldmining industry on fresh water. This research will also promote PIM based separation as a viable industrial separation technology, applicable in other areas.

LP0989464 Prof TM Nolan; Dr J McVernon; A/Prof TP Sloots; A/Prof MD Nissen; Dr SB Lambert; Dr P Richmond; Dr NT Formica

Approved Project Title **Discovery of Novel Respiratory Viruses Causing Influenza-Like Illness in Healthy Australian Adults Aged 18 to 64 Years**

2009 : \$ 220,000

2010 : \$ 250,000

Primary RFCD 3204 MEDICAL MICROBIOLOGY

Collaborating/Partner Organisation(s)

CSL Limited

Queensland Paediatric Infectious Diseases Laboratory

Administering Organisation The University of Melbourne

Project Summary

This work will inform our understanding of the causes of acute respiratory illnesses in Australia at the present time by looking for both known and previously undiscovered respiratory viruses. Increasing the knowledge base regarding causes of disease will have downstream relevance for health policy planners seeking to assess the burden of disease due to different causes. Early identification and description of new diseases will allow pre-emptive evaluation of new public health threats. This information will help to ensure availability and marketability of vaccines to prevent infection.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989302 A/Prof N Papastergiadis; Prof SR Cubitt; Dr S McQuire; Prof RJ Gibson; Ms D Choi; Ms C Cmielewski; Dr AI Yue

Approved Project Title **Large screens and the transnational public sphere**

2009 : \$ 79,000
2010 : \$ 135,000
2011 : \$ 140,000
2012 : \$ 120,000
2013 : \$ 61,000

Primary RFCD 4203 CULTURAL STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Australia Council for the Arts
Fed Square Pty Ltd
Art Center Nabi

Administering Organisation The University of Melbourne

Project Summary

With over 8 million annual visitors, Federation Square, Melbourne, is emblematic of the new public sphere emerging at the junction of physical space and media networks. Fed Square's large screen is integral to 70 large-scale cultural events hosted at the site each year attracting an average of 30,000 people. This project will establish a partnership between Fed Square, the Australia Council and Art Center Nabi in Seoul, pioneering the exchange of technology and cultural content. The empirical research will generate fresh insights into public interactions with large screens, providing a prototype for future cross-cultural events and offering new theoretical perspectives on the use of public space.

LP0989576 Dr AM Sanigorski; Prof EB Waters; Prof A Scott; Mr MG Gussy; Ms LC Gold; Adj/Prof H Calache

Approved Project Title **Social and health inequalities related to changes in drinking water in rural Victoria**

2009 : \$ 129,000
2010 : \$ 125,000
2011 : \$ 134,000
2012 : \$ 134,000
2013 : \$ 140,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Dental Health Services Victoria

Administering Organisation The University of Melbourne

Project Summary

This project will add significantly to knowledge about the role of water in health. Dental caries (decay) experience over an individual's life time is influenced by dental health in early childhood. Obesity and overweight in early childhood is also a predictor of later life obesity. Both these conditions reduce life chances and wellbeing for Australians and are costly for communities. Understanding why and how choices about drinks for children are made by parents using a longitudinal design will help to develop interventions and policies that support the use of water in preference to sweetened and acidic beverages.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989391 Dr JZ Sarant; Dr K Galvin; Prof PJ Blamey; Prof RJ Wales; Dr PA Busby

Approved Project Title **Bilateral Cochlear Implants for Children: Does a Second Implant Improve Language, Psychosocial and Other Outcomes?**

2009 : \$ 121,000

2010 : \$ 87,000

2011 : \$ 113,000

2012 : \$ 114,000

2013 : \$ 112,000

Primary RFCD 3210 CLINICAL SCIENCES

Collaborating/Partner Organisation(s)

Cochlear Ltd

The Shepherd Centre

Hear and Say Centre

Cora Barclay Centre

The Royal Victorian Eye & Ear Hospital

Administering Organisation The University of Melbourne

Project Summary

Severe-profound congenital hearing loss engenders significant costs to society. In 2005, specialised education cost -- on average \$25,000 per child, loss of productivity cost -- \$6.7 billion, and social security benefits were paid to approximately 129,000 individuals who were unemployed due to hearing loss. If bilateral cochlear implantation results in improved language, social development, and academic outcomes, the community benefits arising will be greatly improved quality of life for these individuals and significant savings to society. In partnership with Cochlear Ltd, this study will provide some of the first data worldwide comparing the effects of an additional implant on language, social and educational outcomes.

LP0989733 Prof PJ Scales; Dr M Rudman

Approved Project Title **Thickener operation optimisation and design for the minerals industry**

2009 : \$ 145,000

2010 : \$ 137,000

2011 : \$ 115,000

Primary RFCD 2907 RESOURCES ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AMIRA International Ltd

Administering Organisation The University of Melbourne

Project Summary

Thickening is the main process used in the minerals industry for recovery and recycling of water and the environmental management of waste products. This project will provide simple but fundamental experimental and modelling tools to enhance thickener design and operations. The result will be improved water recovery, reduced waste volumes, environmentally sustainable options for waste tailings disposal and significant cost reductions through improved device design at a large number of sites both in Australia and overseas. An additional benefit will be an integrated design and operational approach to thickener utilisation in the minerals industry.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989178 Prof DM Studdert; A/Prof RL Gruen
Approved Project Title **When informed consent goes poorly: A descriptive study of health care complaints and medical negligence claims**
2009 : \$ 90,000
2010 : \$ 84,000
Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Victorian Health Services Commission
Avant Mutual Group Limited

Administering Organisation The University of Melbourne

Project Summary

To correct process failures effectively, one must understand them. This project will improve knowledge of problems and disputes that arise when patients are 'consented' for medical treatment – an enterprise in which thousands of Australians, many at very vulnerable stages of their lives, are engaged daily. Study findings will advance understanding of breakdowns in the informed consent process and help shape strategies for reducing them. Our partner organisations are extraordinarily well-placed to carry insights from this work to health professionals in the field, enhancing opportunities for real benefits to patients from the research. The project fits with the national research priority of promoting and maintaining good health.

LP0989432 Dr SE Swearer; A/Prof GP Jenkins; Dr PA Hamer
Approved Project Title **What drives recruitment variability in Snapper? Application of a novel theoretical and empirical approach to predict fluctuations in fisheries**
2009 : \$ 150,000
2010 : \$ 110,000
2011 : \$ 110,000
Primary RFCD 2604 OCEANOGRAPHY

Collaborating/Partner Organisation(s)

Fisheries Victoria, Department of Primary Industries

Administering Organisation The University of Melbourne

Project Summary

This research will contribute to the sustainable management of the snapper resource to both protect the population and also provide long-term sustainability in terms of the ecosystem goods and services provided by the fishery, and associated social and economic benefits. Results will have broad applicability, as the critical environmental factors identified are likely to influence other species as well. Understanding the environmental factors underpinning recruitment variation in snapper will allow better predictions of impacts on recruitment levels resulting from climatic variability in the short term, and also longer-term effects of climate change on the population, for incorporation into future management assessments.

LP0989960 Prof P Vinden; Dr B Ozarska; Dr GI Brodie
Approved Project Title **High performance drying of plantation grown eucalypt timber.**
2009 : \$ 150,000
2010 : \$ 150,000
2011 : \$ 150,000
Primary RFCD 2914 MATERIALS ENGINEERING

Collaborating/Partner Organisation(s)

Australian Choice Timber Supplies Pty Ltd

Administering Organisation The University of Melbourne

Project Summary

Forest industries generate \$14 billion annually in Australia and employs 86,000 staff. Hardwood sawn timber is a value added product and microwave technology will increase returns due to more improved timber utilization and better profit margins due to more efficient processing and reduced drying degrade. At the forefront the development of clean, high-tech microwave drying technology and equipment, that is invented in Australia, will allow Australian companies to be forefront in this industrial area, to sell licences, designs, project management and equipment on international markets. This initiative will value-add plantation forests, reduce oil consumption and sequester CO2 in high value products.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989441 A/Prof JP Walker; Mr RC Pipunic; Dr MF McCabe; Dr M Abuzar; Dr DM Whitfield

Approved Project Title **A new paradigm for improved water resource management using innovative water modelling techniques.**

2009 : \$ 150,000

2010 : \$ 150,000

2011 : \$ 120,000

Primary RFCD 2605 HYDROLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Primary Industries, Victoria

Administering Organisation The University of Melbourne

Project Summary

The threat of climate change and Australia's arid environment makes accurate water resource planning essential for sustainable water management. This is particularly relevant in rural Australian catchments with competing needs for scarce water resources, including irrigation to sustain farming communities, maintaining adequate flows for river health, and seasonal flooding for fragile eco-systems. Accurately predicting key water balance components across catchments is crucial for improved water resource planning. Continuously constraining model predictions with time series of spatial data can identify weaknesses in model physics for correction and make model scenario testing more reliable so better water management decisions can be made.

LP0989343 A/Prof EM Webster; Dr PH Jensen; Mr SD Applegate; Dr R Gilmore; Ms KJ Sinclair

Approved Project Title **The Market for Technology in Australia**

2009 : \$ 168,000

2010 : \$ 188,000

2011 : \$ 95,000

Primary RFCD 3402 APPLIED ECONOMICS

Collaborating/Partner Organisation(s)

IP Australia

Australian Institute for Commercialisation

Watermark

Administering Organisation The University of Melbourne

Project Summary

Over the last 5 years, formalised markets for technology have accelerated in the US. However, there is no recognised formal market in Australia. Results from our primary data collection and analysis will highlight whether deficiencies in the market for technology are creating obstacles for the commercialisation of Australian technology. This is a particularly important issue for Australia given our relative isolation arising from geographical distance and lack of attachment to a major trading bloc such as the EU or NAFTA.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989497 A/Prof E Weyer; A/Prof MW Cantoni; Dr PM Dower; Prof IM Mareels

Approved Project Title **Managing Australia's water resources: Automated demand scheduling and supply control systems for large scale irrigation networks**

2009 : \$ 145,000

2010 : \$ 145,000

2011 : \$ 90,000

2012 : \$ 220,000

Primary RFCD 2301 MATHEMATICS

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Rubicon Systems Australia Pty. Ltd.

Administering Organisation The University of Melbourne

Project Summary

Irrigation water delivery losses in Australia are equal in volume to the total non-agricultural water consumption nationwide. In a drought-prone country where water is such a scarce resource, precise water management is critical. Through the intelligent development and application of technology to the supply and management of water flows in irrigation networks, this project will deliver increased flexibility and security in water delivery to farmers, and substantial water savings overall. These benefits will lead directly to increased productivity and growth in the rural sector and wider economy, whilst providing improved environmental and catchment flows of benefit to all Australians.

LP0989537 Dr BA Wintle; Dr DA Keith; Dr MR Kearney; Dr MA McCarthy; Prof MA Burgman; Dr RJ Elith; Dr TD Auld; Prof MF Hutchinson; Prof LA Hughes

Approved Project Title **Robust prediction and decision strategies for managing extinction risks under climate change**

2009 : \$ 177,000

2010 : \$ 164,000

2011 : \$ 100,000

2012 : \$ 180,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

NSW Department of Environment & Climate Change

Administering Organisation The University of Melbourne

Project Summary

Climate change is a principal threat to biodiversity and ecosystem health. The loss of ecosystem services from loss of species and ecosystem change may have serious social and economic repercussions. Unreliable predictions of climate change impacts and inefficient adaptation decisions result in wasted public resources and unnecessary loss of natural assets. In addition to direct benefits of efficient adaptation strategies for case-study ecosystems, techniques arising from this research will improve the way we respond to uncertain, but potentially catastrophic consequences of climate change. Bringing state-of-the-art modelling and formal decision methods to climate change adaptation is a central aim of this research.

University of Ballarat

LP0989647 A/Prof JJ McDonald; Dr H Aucote; Dr A Cooper

Approved Project Title **The Impact of the Introduction of Electronic Gaming Machines on Communities: Health and Wellbeing Consequences**

2009 : \$ 50,000

2010 : \$ 50,000

2011 : \$ 50,000

Primary RFCD 3701 SOCIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Victorian Local Governance Association

Administering Organisation University of Ballarat

Project Summary

The long-term economic and social impact of EGMs is of great importance to Australia. Gambling is a major industry in Australia, with over 7,000 businesses generating profits in excess of \$16 billion annually. Poker machines account for more than half the total revenue collected from all gambling. On the other hand, there are over 290,000 adults in Australia who are experiencing significant problems with their gambling, and on average, the lives of six other people are adversely affected by every problem gambler. This project will inform regulatory frameworks to balance the costs and benefits of gambling. The findings will be used by local governments and regulatory authorities.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Victoria University

LP0989554 Prof SR Gray; Prof JD Orbell; Mr BJ Adams; Dr MR Mergen

Approved Project Title Lowering membrane fouling by matching pre-treatment to membrane type.

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Orica Ltd

Administering Organisation Victoria University

Project Summary

Delivery of potable and recycled water to communities and industry increasingly uses membrane treatment to ensure high standards of water quality, particularly as water scarcity leads to the use of poor quality water sources. Fouling of membranes occurs as water is treated, adding expense and complexity to the process. Reducing fouling will lower the cost of water treatment and improve the economics of treating water in smaller systems at source. This will enable greater reliability of localised treatment, which will reduce pumping requirements and decrease both cost and carbon emissions.

LP0989407 Prof JD Orbell; Prof SW Bigger; Dr LN Ngeh; Mr PM Dann

Approved Project Title The rational development of improved pre-conditioning agents for the removal of oil contamination from wildlife and rocky foreshore

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Phillip Island Nature Park

Administering Organisation Victoria University

Project Summary

Wildlife and ecological resources such as Phillip Island's Little Penguin colony (with 500,000 visitors p.a.) and its environment are at the heart of Australia's ecotourism industry. If properly managed, such resources make significant contributions to the economy and can provide diverse employment opportunities for local communities. They also increase awareness of, and sensitivity to, environmental issues in general. Developing and implementing new and improved techniques for the rescue and rehabilitation of oiled wildlife and for the remediation of contaminated foreshore, apart from its inherent value, will contribute to the sustainability of such resources both at the national and international level.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989339 Prof J Tran Van Hoa; Prof PJ Sheehan; Dr N Van Lich

Approved Project Title **China's Exports and Growth and Major East Asia Summit Economies - Exploring Regional Impact and Policy Responses**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 3402 APPLIED ECONOMICS

Collaborating/Partner Organisation(s)

Ministry of Trade

TradeData International Pty Ltd

Administering Organisation Victoria University

Project Summary

The project benefits Australia's current long-term economic priorities and engagement with Asia in five ways. It provides: (1) collaborative research with East Asia Summit (EAS) networked experts on topics of mutual interest, (2) a new perspective on the effects of China on EAS4 trade and growth, (3) substantive improved findings on EAS4 economic and trade policy options, (4) significant inputs to analysis, debates and negotiations in the recently proposed EAS free trade agreement (FTA), and (5) useful applications to Australia's similar bilateral FTAs under negotiation (e.g., Australia-Korea and Japan FTAs).

Queensland

Griffith University

LP0989475 Dr MA Burford; Prof J Beardall; Prof BA Neilan; A/Prof GR Shaw; Dr PT Orr

Approved Project Title **Environmental drivers for production of the toxin, cylindrospermopsin, by the cyanobacterium Cylindrospermopsis raciborskii**

2009 : \$ 126,000

2010 : \$ 126,000

2011 : \$ 126,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

SEQWater Corporation

Administering Organisation Griffith University

Project Summary

Water authorities spend significant resources to monitor and control algal blooms. A significant part of this is monitoring freshwater toxic algal blooms that can impact on drinking water and recreational uses. One of the difficulties in monitoring blooms is that the toxin content of individual species can vary considerably. It is unclear whether this is caused by changes in environmental conditions, i.e. nutrient, light, temperature. This project would provide the link between environmental conditions and toxin production to improve the ability to predict and monitor toxin production.

LP0989670 Dr C Chen; Prof Z Xu; Dr IR Phillips; Prof LM Condron

Approved Project Title **Ecosystem restoration of bauxite-processing residue sand disposal areas in Western Australia: Important biogeochemical processes and effective fertilisation strategies**

2009 : \$ 110,000

2010 : \$ 60,000

2011 : \$ 50,000

2012 : \$ 110,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Alcoa World Alumina Australia

Administering Organisation Griffith University

Project Summary

Alumina production is one of Australia's most important mining activities. Residue from bauxite-processing must be managed appropriately to minimise detrimental impacts on the surrounding environment. The location of Alcoa's WA Refineries in environmentally- and community- sensitive areas necessitates a detailed understanding of residue disposal area (RDA) management. Currently little is known about the biogeochemical cycling of nitrogen, phosphorus and carbon in the residue sand despite its importance for sustainable rehabilitation practice. Findings from this project are critical for developing improved fertilisation strategies and protocols for ecosystem restoration of RDAs, which will be applicable both in Australia and overseas.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989796 A/Prof RM Connolly; Dr KA Pitt; Dr D Rissik; A/Prof RC Babcock

Approved Project Title **Influence of Marine Protected Areas on ecosystem resilience and ecological processes**

2009 : \$ 105,000

2010 : \$ 79,000

2011 : \$ 46,000

2012 : \$ 90,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Environmental Protection Agency

Administering Organisation Griffith University

Project Summary

Australia is implementing a national representative system of marine protected areas (MPAs). The aims of the MPAs include ensuring ecological viability, maintaining ecological processes, and protecting biodiversity. The ability of MPAs to achieve these aims, however, is based largely on theory rather than empirical evidence.

Implementation of MPAs is often controversial as it may cause economic hardship to communities dependent on fishing. Our project will benefit environmental managers by determining if and how MPAs influence biodiversity, ecological processes, and ecosystem services and resilience. It will benefit the wider community by providing the rigorous scientific evidence in favour of MPAs that is demanded by stakeholders.

LP0989363 Prof RG Dromeay; Prof PA Lindsay; Prof IJ Hayes; Prof P Fritzson

Approved Project Title **Reducing the risks associated with developing large-scale, critical software-integrated systems**

2009 : \$ 100,000

2010 : \$ 110,000

2011 : \$ 100,000

Primary RFCD 2803 COMPUTER SOFTWARE

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Raytheon Australia

K.J. Ross & Associates Pty. Ltd.

Administering Organisation Griffith University

Project Summary

Industry, government and defence increasingly rely on large-scale, critical software-integrated systems. The scale and complexity of these systems means current methods of analysing, designing and assuring their dependability are struggling to provide the constructive support and assurance that is demanded. Consequently, there are significant risks of cost and schedule overruns and of system problems and failures. This project builds on results from our current collaboration - a new method for modelling, analysis and defect detection for the requirements of large-scale systems. We will develop and scale-up to industry strength, simpler, more powerful, strategies for analysing, designing and providing the high level of assurance required.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989509 Dr DA James; Prof DV Thiel; A/Prof B Burkett

Approved Project Title **Development and application of wearable micro technologies for the assessment of swimming performance and activity.**

2009 : \$ 80,000

2010 : \$ 40,000

2011 : \$ 75,000

Primary RFCD 3214 HUMAN MOVEMENT AND SPORTS SCIENCE

Collaborating/Partner Organisation(s)

Queensland Academy of Sport

Administering Organisation Griffith University

Project Summary

Australia's sporting performance at a national and international level are ingrained in the psyche of everyday Australians. It encourages sporting activity at every level of our society contributing to our well being and the development of tomorrow's athletes.

This research project will develop important tools for the assessment and servicing of our nations elite athletes, including those in regional areas. These tools will encompass the very latest in wearable technology and allow athletes to be measured under performance conditions rather than in the laboratory.

Assessment of human motion is also desirable as we seek to assess and aid a progressively aging population and a growing epidemic of obesity in our children.

LP0990060 Prof CJ Sampford; Prof RC Thakur; A/Prof S Chesterman

Approved Project Title **Building the Rule of Law in International Affairs**

2009 : \$ 83,000

2010 : \$ 106,000

2011 : \$ 107,000

Primary RFCD 3903 JUSTICE AND LEGAL STUDIES

Collaborating/Partner Organisation(s)

Centre for International Governance Innovation

Administering Organisation Griffith University

Project Summary

Australia has been committed to a rules-based international system since the foundation of the UN and, while recently wavering in practice has remained formally supportive of international law. This is not just a matter of values. As a major trading nation and a middle power, Australia prosperity and security would benefit from a more rules-based international order. This project aims to find practical ways of bolstering and building the rule of law in international affairs. In doing so, this international research involving the UN, a Canadian think tank and UN University's Australian based governance institute will allow Australia to take leadership role in multilateral thinking and action to bolster the international rule of law.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989243 Prof Dr H Schippers; Dr P Dunbar-Hall; Prof PR Hayward; A/Prof LM Barwick; Prof K Howard; Prof P Campbell; Prof J Drummond; Dr H Lundstrom; Dr RA Letts

Approved Project Title **Sustainable futures for music cultures: Toward an ecology of musical diversity**

2009 : \$ 133,000

2010 : \$ 130,000

2011 : \$ 130,000

2012 : \$ 168,000

2013 : \$ 60,000

Primary RFCD 4101 PERFORMING ARTS

Collaborating/Partner Organisation(s)

International Music Council

Music Council of Australia

Lund University

Administering Organisation Griffith University

Project Summary

The project will contribute to a vibrant and diverse musical life in Australia, and by extension the sense of wellbeing of its population. Further, it has the potential to substantially contribute to Australia's reputation as an innovative, forward looking nation by taking the lead in the emerging sub-discipline of applied ethnomusicology. Finally, from the perspective of the National Research Priorities, the project will contribute to fostering understanding between cultures in Australia and the region by increasing insight into the working of other cultures, focusing on the Asia-Pacific.

LP0989151 Prof AJ Wilkinson; Prof KA Brown; Prof KJ Burgess; Dr KJ Townsend

Approved Project Title **Managing Productive and Collaborative Relations in Australian Workplaces**

2009 : \$ 105,000

2010 : \$ 105,000

2011 : \$ 118,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

APDI Dr KJ Townsend

Collaborating/Partner Organisation(s)

Department of Employment and Industrial Relations

Administering Organisation Griffith University

Project Summary

Concerns over workplace productivity are high on the agenda of policymakers. Evidence suggests that collaboration in the workplace and high involvement approaches have a productivity premium of up to 20 per cent over those without the commitment to collaborative approaches. However, collective relations do not necessarily mean union relations nor necessarily collaborative relations. This research will benefit Australia's social and economic fabric through understanding alternative means by which collaborative workplace relations lead to productivity gains. This is consistent with the current policy approach of government in promoting productive and harmonious workplace level industrial relations.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

James Cook University

LP0989164 A/Prof N Sivakugan; Dr A Arulrajah; Dr M Bo; Dr JJ Ameratunga; Prof JH Atkinson; Mr PJ Boyle

Approved Project Title Sustainable usage of dredged clay materials as land reclamation fills

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Port of Brisbane Corporation

DST Consulting Engineers

Coffey Geotechnics Pty Ltd

Administering Organisation James Cook University

Project Summary

Millions of cubic metres of dredged materials are removed from river and sea beds every year in dredging projects. It is common to dump a significant portion of the dredged spoils into the sea which can result in serious environmental problems such as deterioration of water quality, damage to aquatic habitats, disruption of ecosystems and dispersion of fine clay particles in seawater. The proposed use of dredged clays as land reclamation fill will lead to a substantial reduction in or even eliminate the need for dumping dredged clays into offshore dumping locations. The stabilized dredged clays have great potential if their geotechnical characteristics are adequately understood.

Queensland University of Technology

LP0989403 Prof AC Arthurs; Prof JD Knowles; Prof PW Graham; A/Prof C Kapitzke; Mr DP Evans; Ms ME Moore

Approved Project Title **Remote Music Interactions Through Online Networks.**

2009 : \$ 103,000

2010 : \$ 77,000

2011 : \$ 110,000

Primary RFCD 4101 PERFORMING ARTS

Collaborating/Partner Organisation(s)

In The Chair Pty Ltd

Sydney Symphony Orchestra

Administering Organisation Queensland University of Technology

Project Summary

This will put Australia at the leading edge of Web 2.0 research. The Australian sites of practice in the project, and also the wider community will benefit through access to musical expertise for remotely located musicians. The principles developed in this study will be transferable to other web 2.0 interactions. Not only will it give insight into the unique qualities of online but also face-to-face interactions which are not easily replicated in online space This will be one of the rare sites where informal learning contexts can actually be studied and this knowledge should inform more formal educational contexts. Additionally the study of user-generated content will have a stimulating impact on the future of music publishing in Australia.

LP0989663 Prof TJ Cooper; Dr AR Baturo; Dr CJ Matthews; Mr RN Weatherall; Mr MJ McCarthy; Ms WA Lang; Ms SA Armstrong

Approved Project Title **Skilling Indigenous Australia: Effective numeracy learning for employment by regional and remote Indigenous students in vocational education and training courses**

2009 : \$ 221,000

2010 : \$ 207,000

2011 : \$ 213,000

2012 : \$ 196,000

Primary RFCD 3302 CURRICULUM STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Education, Training and the Arts

Tropical North Queensland Institute of Tafe

Barrier Reef Institute of Tafe

Construction Skills Queensland

Kirwan State High School

Wadja Wadja High School

Tagai State College

Shalom Christian College and Primary School

Northern Peninsula Area State College

Mount Isa Institute of Tafe

Administering Organisation Queensland University of Technology

Project Summary

Increasing levels of Indigenous VET certification will enable Indigenous inclusion in local labour markets, which are currently experiencing skills shortages in education, health, construction and mining. This will reduce welfare dependence and the need for intervention programs, in turn improving Australia's economic activity. This project is a significant collaboration between schools, TAFEs and Industry representatives that service remote areas, which aims to develop a theory about effective numeracy instruction. This theoretical framework will provide strategies for VET teachers and supervisors to facilitate Indigenous student's numeracy learning in a manner that is culturally empowering, builds pride and sustains community linkages.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989625 Prof H Edwards; Prof MD Courtney; A/Prof N Graves
Approved Project Title **Pathways to healing: determining effective care pathways for chronic wounds for timely healing, prevention and cost effectiveness.**
2009 : \$ 65,000
2010 : \$ 45,000
Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Smith & Nephew

Administering Organisation Queensland University of Technology

Project Summary

Care for chronic leg ulcers is reported to cost 1-2.5% of total health budgets (>3 billion \$US/year, \$500 million AUD/year). Efficient use of health resources and improved health as a result of effective chronic wound management (early healing and prevention) are the most significant potential outcomes from this study. In addition to direct health care costs, chronic wounds are associated with significant hidden burdens on the community resulting from loss of mobility, decreased functional ability, social isolation and loss of participation in the workforce/society. This study will provide much needed information on management of this chronic disease to promote improved quality of life, health and independence in this population.

LP0989152 Prof LD English; Dr LA Dawes; Dr P Hudson; Mr T Byers; Mr R Broadhead; Mr MK Carter; Dr J Szymczyk
Approved Project Title **Implementing Engineering Experiences in the Middle School**
2009 : \$ 62,000
2010 : \$ 48,000
2011 : \$ 55,000
Primary RFCD 3302 CURRICULUM STUDIES

Collaborating/Partner Organisation(s)

Anglican Church Grammar School

Somerville House

Grace Lutheran College

Department of Main Roads

Administering Organisation Queensland University of Technology

Project Summary

Engineering and science are increasingly recognized as enablers for invention, innovation, and economic growth. Advances in these domains that improve society will increasingly depend on our ability to educate school students about the world of engineering prior to entering university. The study's national benefits include: exposing young students to the world of engineering and its rich career opportunities; showcasing engineering for female students; promoting mathematics and science as key enabling subjects for engineering; addressing national research priorities including an environmentally sustainable Australia; and engaging engineers and educators, including undergraduates, in seminal collaborative research and resource development.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989526 Prof A Luke; Dr AF Woods; Dr JE McCollow; Mr P Herschell; Ms LL McFarlane; Ms JL Chee

Approved Project Title **What teachers do with the official curriculum: A quantitative study of factors influencing the curriculum-in-use**

2009 : \$ 100,000

2010 : \$ 100,000

Primary RFCD 3302 CURRICULUM STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Queensland Studies Authority

Queensland Teachers' Union

Administering Organisation Queensland University of Technology

Project Summary

The Federal Government has declared 'the education revolution' as a key focus of reform. In response to public debate, it has called for a National Curriculum and a policy focus on teacher quality. This project is the first large-scale state survey of teacher engagement with and use of official curriculum documents. It will document how teacher expertise and preparation, systemic and professional support influence how teachers interpret and use the curriculum. The project will provide a new evidence-base for state and national policy reform in: curriculum, teacher education, and professional development.

LP0989705 A/Prof A Pisarski; A/Prof PJ Jordan; Prof NM Ashkanasy; Dr A Chang; A/Prof RV Zolin; Prof CA Hatcher; Ms MC Capelli

Approved Project Title **The contribution of project leader behaviours to processes and outcomes in large scale projects.**

2009 : \$ 150,000

2010 : \$ 155,000

2011 : \$ 140,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Defence Material Organisation

Administering Organisation Queensland University of Technology

Project Summary

In Australia and worldwide, large-scale projects often fail to meet quality, time or budget goals resulting in outcome dissatisfaction, and large time and cost project overruns. This project focuses on achieving better project processes and leadership practice, especially in large-scale, complicated projects, in order to improve project success (as viewed by multiple stakeholders) and the performance, health and wellbeing of staff. We focus on Australian defence acquisition projects in order to test our theoretical model. This project will provide a major contribution to Australian defence capability by identifying how project leaders can improve project operations and deliver successful innovative acquisition products on time and budget.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989743 Prof RM Skitmore; Mr AJ Bridge; Prof ME Drew; Dr RJ Bianchi; Prof SM Rowlinson; Mr MC Jefferies

Approved **Reforming the procurement of construction and financing of Australian infrastructure:**

Project Title **Advancing capacity, competition and investment**

2009 : \$ 104,560

2010 : \$ 104,560

2011 : \$ 104,560

Primary RFCD 3102 BUILDING

APA(I) Award(s): 4

Collaborating/Partner Organisation(s)

Partnerships Victoria, Department of Treasury and Finance, Victoria

Privately Financed Projects, NSW Treasury

Queensland Treasury

Department of Housing and Works, Government of Western Australia

Department of Treasury and Finance, South Australia

Department of Infrastructure and Planning, Queensland Government

CIIA (Qld Dept of Public Works/Qld Dept of Main Roads/Leighton/Thiess/Baulderstone Hornibrook)

Connell Wagner

Peron Group

Infrastructure Association of Queensland

Infrastructure Partnerships Australia

Administering Organisation Queensland University of Technology

Project Summary

The project will significantly assist Federal and State governments in delivering value for money in the provision of a substantial infrastructure pipeline. The project will promote the transformation of the domestic construction industry in Australia, in terms of saving unnecessary transaction costs, promoting productivity, advancing training and accessing the world's best knowledge and skills. In total, the project will help ensure that new infrastructure contributes to Australia's economic growth and counters inflationary pressures. Finally, the transferable knowledge outcomes of this project have potential to capture global attention and promote Australia as a leading nation in the provision of infrastructure.

LP0989716 Dr JE Smeathers; Dr SR Urry; Dr SL Hooper; Dr SC Wearing

Approved **Understanding Tendon Response to Sport and Exercise: Implications for Optimising**

Project Title **Training, Injury Prevention and Accelerated Rehabilitation**

2009 : \$ 120,000

2010 : \$ 70,000

2011 : \$ 60,000

Primary RFCD 3214 HUMAN MOVEMENT AND SPORTS SCIENCE

Collaborating/Partner Organisation(s)

Queensland Academy of Sport

Administering Organisation Queensland University of Technology

Project Summary

This research will use frontier technologies to establish the effect of physical activity on tendon adaptation and injury. It will address National Research Priorities and lead to contemporary evidence-based physical activity practices to optimise health and fitness, prevent injury, and expedite rehabilitation after injury. Given the significant national investment in sport, the rise in obesity, and the immense cost of sedentary behaviour and sport-related injuries, this research will have applications for enhancing physical activity recommendations that maintain health for all Australians. It will enhance Australia's leading position in international sport and sport science research and have beneficial applications for occupational health.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of Queensland

LP0989845 Dr KR Anthony; Prof O Hoegh-Guldberg; Dr G Diaz-Pulido; Prof RB Dunbar; Prof JR Koseff; Prof SG Monismith; Dr CM Eakin; Dr D Gledhill; Mr R Beeden

Approved Project Title **Multi-Scale Analysis of the Vulnerability of Coral Reefs to Ocean Acidification**

2009 : \$ 90,000

2010 : \$ 93,000

2011 : \$ 93,000

Primary RFCD 2799 OTHER BIOLOGICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

National Oceanic and Atmospheric Administration

Stanford University

Great Barrier Reef Marine Park Authority

Administering Organisation The University of Queensland

Project Summary

The Great Barrier Reef (GBR) is one of Australia's biggest icons, and represents more than 10% of the world's coral reefs. It is a World Heritage Area and is home to more than 1 million species. The GBR provides Australia with more than \$6 billion in annual national revenue. To help manage for sustained resilience of the GBR in an era of climate change, Australia needs to understand the major threats, in particular ocean acidification. By producing an innovative framework for assessing acidification risks, the project will help Australia demonstrate continued stewardship of one of the world's richest and most sensitive ecosystems.

LP0989162 Prof DJ Brereton; Prof GA Lawrence; Dr C Pattenden; Dr LA Cheshire

Approved Project Title **Local government, mining companies and the resources boom in regional Australia: meeting the governance challenge**

2009 : \$ 83,000

2010 : \$ 60,000

Primary RFCD 3701 SOCIOLOGY

Collaborating/Partner Organisation(s)

Queensland Resources Council

New South Wales Minerals Council Ltd

Association of Mining Related Councils Inc.

The Local Government Association of Queensland Incorporated

Local Government Association of South Australia

Rio Tinto Limited

BM Alliance Coal Operations Pty Ltd (BMA)

Administering Organisation The University of Queensland

Project Summary

Sustainable regional development and continuing growth of the resources sector are key national priorities. The current resources boom is placing significant pressure on the physical, social and governance infrastructure of mining-intensive regions. Unless these issues can be better managed, new resource projects risk being delayed or deferred and the trend to fly-in fly-out operations will be accelerated, with deleterious consequences for sustainable regional growth. This project will contribute to a more effective response to these challenges by investigating the changing nature of local level governance in mining intensive regions and how these arrangements can be improved.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989954 Prof RJ Capon

Approved **Towards Next Generation Anthelmintics.**

Project Title

2009 : \$ 135,000

2010 : \$ 145,000

2011 : \$ 150,000

Primary RFCD 2502 INORGANIC CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

ParaCo

Administering Organisation The University of Queensland

Project Summary

The agricultural industry is in urgent need of new, safe and cost effective treatments for parasite infections in commercial livestock (sheep, cattle, goats). The current multi billion dollar agrochemical industry provides only three classes of antiparasitic drug, all of which are >25 yrs old and are largely ineffective due to the widespread resistance. This project will advance the development of a new class of antiparasitic treatment, improving outcomes for Australian farmers by reducing reliance on expensive ineffective agrochemical imports, reducing chemical load on the environment, improving pastures and increasing yields. In short, improved livestock health will lead to more sustainable and productive farming, and a stronger economy.

LP0989676 Prof SP Collin

Approved **Sensory strategies for protecting endangered sawfishes**

Project Title

2009 : \$ 25,000

2010 : \$ 54,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Cairns Marine Aquarium Fish Pty Ltd

Administering Organisation The University of Queensland

Project Summary

The Gulf of Carpentaria is the last habitat worldwide containing sustainable populations of sawfish. Easily entangled in nets, the saw has reduced population numbers dramatically in Australia with all species now protected under the Australian Environment Protection and Biodiversity Conservation Act, including the Convention on International Trade in Endangered Species (CITES). This study will provide basic biological information on feeding, prey manipulation and the role of critical senses in the only captive population of sawfishes in Australia. Such knowledge will underpin the development and use of visual, chemical and/or magnetic repellents by fisherman that are still responsible for the loss of large numbers of sawfish as by-catch.

LP0989200 A/Prof D Edwards

Approved **Next generation metagenomics**

Project Title

2009 : \$ 133,000

2010 : \$ 133,000

2011 : \$ 133,000

Primary RFCD 2702 GENETICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Biomatters Ltd

Australian Genome Research Facility Ltd

Administering Organisation The University of Queensland

Project Summary

Applying the latest scientific advances supports society directly through promoting a knowledge based economy, as well as indirectly through securing agricultural productivity, improved biomedical applications and a greater understanding of our changing environment. Establishing these methods places Australia at the forefront of genomics technology with direct applications for Australian biomedical and biotechnology industries. Applying next generation sequencing for metagenomics will provide a detailed understanding of microbial population structures and lead to advances in biomedicine, agriculture and environmental science.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989499 Prof N Ellis; Prof GA Jull; Dr V Johnston; Prof J Strong; Dr SA Gargett; A/Prof M Battersby; Dr KW Adam

Approved Project Title **Does Self Management Increase The Effectiveness Of Vocational Rehabilitation For Chronic Compensated Disorders?**

2009 : \$ 86,000

2010 : \$ 87,000

2011 : \$ 20,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Health Services Australia (HSA) Group

The Workers' Compensation Regulatory Authority (Q-COMP)

Motor Accident Insurance Commission (MAIC)

Administering Organisation The University of Queensland

Project Summary

Workplace injuries result in human suffering and are costly for those injured, employers and the community. For some, the injury results in a chronic disability, a sense of powerlessness, and unemployment. This study will test whether participation in a 'self-management' program improves health and well-being, decreases pain, results in earlier return-to-work and is a more efficient use of resources than usual care in vocational rehabilitation. Self-management programs have been shown to be effective in helping people manage chronic disabling conditions. By adapting the self-management program for this population it is anticipated that the human and financial burden on individuals and society from chronic injuries will be reduced.

LP0989765 Dr B Feng; Dr N Drinnan

Approved Project Title **Minimization of emissions from dimethyl ether (DME) combustion in a diesel engine**

2009 : \$ 110,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Ambre Energy Ltd

Administering Organisation The University of Queensland

Project Summary

The project works on the utilization of dimethyl ether, an innovative clean fuel produced from coal or natural gas, as a diesel substitute. The utilization of DME in diesel engines can potentially reduce the emissions by 90%, making it possible to meet the strictest engine standard. In the meantime the engine efficiency can be improved. The outcomes of the project will help accelerate the maturity of the DME market in Australia.

LP0989643 Prof IJ Hayes; Dr CN Cifuentes

Approved Project Title **Software Quality Improvement Through Static Analysis and Annotation**

2009 : \$ 93,000

2010 : \$ 92,000

2011 : \$ 94,000

Primary RFCD 2803 COMPUTER SOFTWARE

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Sun Microsystems Australia

Administering Organisation The University of Queensland

Project Summary

Software forms the basis of critical infrastructure that supports industries such as electronic commerce. Flaws in the software can lead to failure of the overall system, or allow the security mechanisms of the software to be by-passed. This project is developing methods to improve the quality of software by finding common flaws that lead to security vulnerabilities or runtime failures. Within Australia, it is estimated that there are approximately 75,000 software developers who make substantial use of C/C++ and who could benefit from the availability of better automatic static analysis tools to improve both the quality of the code they produce and their productivity.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989211 Prof PA Lindsay; Prof RG Dromey; Dr RK Porteous; Dr VL Wheway

Approved Project Title **A New Approach to Air Traffic Management to Deliver Significantly Reduced Environmental Impact and System-wide Efficiencies**

2009 : \$ 156,000

2010 : \$ 145,000

2011 : \$ 89,000

Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Airservices Australia

The Boeing Company - Phantom Works

Qantas Airways Limited

Administering Organisation The University of Queensland

Project Summary

Aviation is often cited as a major contributor to harmful emissions in the upper atmosphere. The primary outcome of this project is the development of tools that will enable aviation industry stakeholders to optimise the deployment of 4-Dimensional User Preferred Trajectories across Australian airspace. It is expected that this will result in significant environmental benefit, through reductions in fuel burn for each flight, and increases in system effectiveness. The project will enable better analysis of Australian aviation environmental effect, whilst at the same time allowing the aviation industry to continue to contribute to Australia's sustainable economic growth.

LP0989161 Dr MM Mayfield; A/Prof CJ Bradshaw; A/Prof MJ Lawes; Dr DJ Chittleborough; Dr PD Erskine; Dr T Gardner; Dr MR Menendez Martinez

Approved Project Title **Identifying cost-effective reforestation approaches for biodiversity conservation and carbon sequestration in the Australian wet tropics**

2009 : \$ 132,000

2010 : \$ 130,000

2011 : \$ 23,000

2012 : \$ 65,000

2013 : \$ 75,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Biome5 Pty Ltd

Greening Australia

Terrain NRM Pty Ltd

Stanwell Corp Ltd

Administering Organisation The University of Queensland

Project Summary

There is great potential for rainforest reforestation to help in the protection of Australia's tropical flora and fauna. Little is known, however, about how to reforest pasture to rainforest for the purpose of maximising the recovery of native biodiversity. We propose a unique experimental study of rainforest reforestation practices with biodiversity conservation as a primary goal. Reforestation is currently an unlikely option for most landholders in Australia's tropics given the lack of data on the economic benefits obtainable from such efforts. Our study examines the profits obtainable through the carbon market for each reforestation approach with the goal of increasing the feasibility of rainforest reforestation in North Queensland.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989701 A/Prof J Meers; A/Prof PR Young; Dr DP Higgins

Approved Project Title **Retroviral invasion of the koala genome: prevalence, transmission and role in immunosuppressive disease**

2009 : \$ 80,000

2010 : \$ 80,000

2011 : \$ 80,000

Primary RFCD 3005 VETERINARY SCIENCES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Australia Zoo Wildlife Warriors Worldwide Ltd.

Australia Zoo

Queensland Parks and Wildlife Service

Administering Organisation The University of Queensland

Project Summary

Koalas are a national symbol yet many of their populations are in decline as a result of habitat loss and disease. Lymphoid cancers and opportunistic infections are significant diseases in both captive and wild koala populations. We previously demonstrated that the recently identified koala retrovirus is associated with lymphoid cancer in koalas. This project will determine the distribution of the virus in Australia, the mechanism of its spread and its effect on the immune function of koalas. This research will provide a foundation for better management of captive koalas and for conservation of wild koalas.

LP0989217 Prof AV Nguyen; Dr Z Xu; Dr L Huang

Approved Project Title **Tailoring nano-crystal suspensions for extended ion supply to hydrophobic and hydrophilic leaf surfaces**

2009 : \$ 187,000

2010 : \$ 170,000

2011 : \$ 153,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

Agrichem - Liquid Fertiliser Pty Ltd

Administering Organisation The University of Queensland

Project Summary

Nutrient deficiency undermines the potential of billions of people and many nations. The requirement is to rapidly increase micro-nutrient delivery to support intensive and fortified crop production. This proposal seeks to develop a controlled ion release system through the use of tailored suspensions of nano-crystal nutrient materials for delivery to plants through the leaves. This will increase yields from arable land, reduce water requirements and fertiliser applications, fortifying foods for better nutrition leading to improved human health and wellbeing. It leverages and applies recent significant advances in surface science and nanotechnology to gain improved outcomes in agriculture.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989159 Dr K Rabaey; Dr Y Mu; Dr RA Rozendal; Dr DJ Batstone; Prof J Keller; Dr JF Mueller; Mr YP Poussade; Dr BL Tan

Approved Project Title **Electrochemical treatment of problematic water recycle waste streams**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Veolia Water Australia

Magneto Special Anodes

Queensland Health Forensic and Scientific Services

Administering Organisation The University of Queensland

Project Summary

Supply of potable water to Australia's major urban areas is a major challenge to growth and quality of life. Indirect potable reuse via membranes can address this issue, as it offers an inexpensive and sustainable water supply, as well as leveraging new water sources. However, the potential impact of the generated reject concentrates on aquatic and human health is potentially of large concern. Our project helps address this, by making reject treatment economically and environmentally much more sustainable, and thereby future-proofing the technology. In addition, it develops technology that can be used worldwide to treat other recalcitrant streams (e.g., hospital, tannery, pulp and paper), is highly scalable, and is low in operating cost.

LP0989824 Dr S Reid; Prof LK Nielsen

Approved Project Title **In-Vitro Production of Baculovirus Biopesticides - A Systems Biology Approach**

2009 : \$ 250,000

2010 : \$ 250,000

2011 : \$ 250,000

Primary RFCD 2703 MICROBIOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Agrichem

Administering Organisation The University of Queensland

Project Summary

This project has the potential to develop an in-vitro production process that can produce large quantities of Baculoviruses at costs comparable to selective chemicals. This could transform agriculture allowing farmers to choose an insect control option that is both safe and efficacious to use as well as economically and environmentally superior to chemicals, and less controversial than transgenic plants. This outcome would enhance Australia's reputation in the animal cell technology field (related technology is used to produce protein pharmaceutical products), and will earn significant export dollars through licensing out of the technology or through large scale manufacturing and export of the product itself.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989607 Prof AK Whittaker; Dr I Blakey; Dr KS Jack; Prof J Drennan; Dr TR Younkin

Approved Project Title **Advanced Lithographic Solutions using Block Copolymers: Integrating Self Assembly and Lithography**

2009 : \$ 320,000
2010 : \$ 320,000
2011 : \$ 360,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Intel Corporation - Components Research

Administering Organisation The University of Queensland

Project Summary

The semiconductor industry is one of the largest world-wide, with annual revenue of \$220B and employing over 1.5M people around the world. This project provides a unique opportunity for development within Australia of significant expertise in the field of self assembly in photolithography. Plastics with tailored properties will be made and used to develop novel processes to reduce the defectivity in integrated circuit manufacture. The ultimate benefit will be faster and more energy efficient microprocessors. A major outcome of this project will be establishment of Australia as a world-leader in this rapidly expanding field. Furthermore, the technology can be applied broadly to many other applications such as high density data storage.

LP0989735 Prof DJ Williams; Dr DM Pedroso; Prof D Sheng; Dr DJ Stolberg; Mr PR Wright

Approved Project Title **Effectiveness of deep natural clay, compacted clay and geomembranes in limiting seepage from coal seam gas production water evaporation ponds**

2009 : \$ 62,000
2010 : \$ 62,000
2011 : \$ 62,000

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)
Queensland Gas Company

Administering Organisation The University of Queensland

Project Summary

Australia's coal seam gas reserves exceed those of the Moomba and Bass Strait gas fields combined. Queensland's coal seam gas production already accounts for more than 50% of the state's natural gas supply, and continues to grow rapidly. The production of coal seam gas will escalate in coming years, particularly to provide a clean fuel for electricity generation and feed stock for liquefied natural gas to supply rapidly growing markets in Asia. As gas production increases, so too does the generation of saline water. This research will ensure that the evaporation of the saline water does not impact the underlying Great Artesian Basin, so that coal seam gas production may continue and grow.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989662 Dr AL Wright; Prof PW Liesch; Prof ML Hayward; Dr SA Middleton

Approved Project Title **Institutional logics in organisations: The interplay between managerial and professional logics in hospitals**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

2012 : \$ 12,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APDI Dr SA Middleton

Collaborating/Partner Organisation(s)

Queensland Health

Royal Brisbane and Womens Hospital

Administering Organisation The University of Queensland

Project Summary

In community surveys, health is consistently regarded as the most important issue by Australian voters. Healthcare is particularly relevant in Queensland, where unprecedented population growth has increased waiting lists. Difficulties in recruiting and retaining qualified staff in Queensland's public hospitals are well-publicised. This research examines how organisational practices within hospitals contribute to these challenges in delivering quality healthcare. Improved work practices, staff retention and hospital performance will result from a better understanding of the interaction of managerial and professional logics in decision making and problem solving in the day-to-day practice of public healthcare.

LP0989717 Dr X Yao; Prof GM Lu; Dr L Wang

Approved Project Title **An integrated system for high-efficiency hydrogen assisted electricity generation from solar energy**

2009 : \$ 175,000

2010 : \$ 150,000

2011 : \$ 150,000

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Control Technologies International

Administering Organisation The University of Queensland

Project Summary

Energy security and climate change have intensified the search for renewable energy technologies that will reduce the carbon footprint of our economies. This project will lead to a technology platform, enabling hydrogen production and electricity generation by a clean way, which is high potential in solar-abundance Australia. Its success will definitely benefit Australia both economically and environmentally. It will speed up the utilisation of solar energy and help Australia reduce greenhouse emissions. It would also lead to advanced technologies that can be commercialised and exported overseas, thus positioning Australia at the forefront of renewable energy development.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989723 Prof J Zhu; Dr S Rosenberg

Approved Project Title **Development of a novel technology for DSP separation and soda recovery in alumina refineries**

2009 : \$ 90,000

2010 : \$ 75,000

2011 : \$ 75,000

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BHP Billiton Bauxite and Alumina Technology

Administering Organisation The University of Queensland

Project Summary

The successful completion of this project will provide economic and environmental benefits to the Australian alumina industry. For example, this project will provide an effective and economical method for separation of DSP (desilication product) from red mud (thus reducing the pollution by the long-term alkalinity) as well as a new solution to soda recovery. The technology developed will be able to be used as an example to the waste management and recovery of other Australian mineral, energy and chemical industries. The modelling and mechanism studies will also contribute to materials separation and processing.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

University of Southern Queensland

LP0989722 A/Prof R Gururajan; A/Prof JA Gow; A/Prof J Soar; Dr K Alam; Prof BH Thomas; Dr J Stanek; Prof C Kesavan; Mr C Moloney; Mr BR Avery

Approved Project Title **Implementing teleauscultation for remote user health services in Australia: A case study with economic evaluation**

2009 : \$ 78,591

2010 : \$ 78,591

2011 : \$ 78,591

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APDI Mr BR Avery

Collaborating/Partner Organisation(s)

Queensland Health

RMK Engineering College

ACRREBP (Joanne Briggs Institute)

Administering Organisation University of Southern Queensland

Project Summary

By reducing the requirement for patients to travel to major centres for assessment, this project is expected to result in significant direct savings per individual patient. Indirect cost reductions will also result from the minimisation of travel for patients, with the potential for national savings in transport infrastructure costs, greenhouse gases emissions, and decreasing other undesirable consequences of either private or public transport travel for patients and/or specialist physicians. Further indirect benefits include incidental learning by staff working with patients in remote location through the remote link. Other advantages include happier patients as they will not need to leave their home and loved ones as often.

University of the Sunshine Coast

LP0989545 Dr J Scott; Prof PM Weller; Ms B Stevens; Dr RD Laurie

Approved Project Title **From postbox to policy powerhouse: The history and politics of the Department of the Prime Minister and Cabinet 1911-2010**

2009 : \$ 60,000

2010 : \$ 32,012

Primary RFCD 3602 POLICY AND ADMINISTRATION

Collaborating/Partner Organisation(s)

Department of Prime Minister and Cabinet

Administering Organisation University of the Sunshine Coast

Project Summary

Understanding our national government and its development is vital if we are to know the foundations on which we build. As more and more appears to be dragged towards the centre, because of the need to coordinate the big issues such as climate change, capacity constraints, terrorism and skills shortages, so the capacity of the centre becomes more important. This longitudinal study of continuity and change in the Department of the Prime Minister and Cabinet will provide insights into the way that governments can build for the next 100 years.

South Australia

The Flinders University of South Australia

LP0989354 Dr JS Quinton; Dr SR Clarke; Dr K Benkendorff; Dr S Murray-Jones; Mr DG Fotheringham; Dr JE Tanner

Approved Project Title **Enhancing Seagrass Restoration : Improving Hessian Durability in Marine Environments**

2009 : \$ 100,000

2010 : \$ 130,000

2011 : \$ 120,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department for Environment and Heritage

Administering Organisation The Flinders University of South Australia

Project Summary

The establishment of an environmentally benign method for restoration of seagrass beds (which provide habitat for a wide range of commercially, recreationally and ecologically important marine species) will enhance Australia's capability of maintaining its coastal marine environment in support of its fishing and ecotourism industries. Furthermore, it will ultimately improve our capacity to manage the environmental impact of human development on our natural resources. If successful, the knowledge gained of the dynamics of marine biofilms on differentially coated natural fibers could facilitate broader application of methods used in environmental restoration and marine based industries, and foreshadow new applications.

LP0989699 A/Prof M Staniforth

Approved Project Title **The South Australian Historical and Maritime Archaeology Management Project**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

SA Maritime Museum

Department of Environment and Heritage

AHMS Pty Ltd

Administering Organisation The Flinders University of South Australia

Project Summary

This project is expected to identify strategies for the implementation of best practice archaeological heritage management in Port Adelaide and South Australia. This research will result in strategies and approaches which will safeguard archaeological heritage while allowing development to proceed and community needs and interests to be met. These strategies will be used as the basis for development of an archaeological heritage management model that results in archaeological research and conservation outcomes and public and community outcomes. It is expected that this model will be applicable within Port Adelaide, South Australia, Australia and Internationally.

The University of Adelaide

LP0989613 Dr JJ Austin; Dr K Belov; Dr ME Jones; Dr EP Murchison; Mrs A Pearse

Approved Project Title **Evolution, disease and extinction - using ancient and modern Deoxyribonucleic acid (DNA) to investigate molecular evolution in the Tasmanian devil**

2009 : \$ 60,000

2010 : \$ 58,000

2011 : \$ 50,000

Primary RFCD 2702 GENETICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Primary Industries and Water, Tasmania
Zoos SA

Administering Organisation The University of Adelaide

Project Summary

The Tasmanian devil is Australia's largest living marsupial carnivore and one of Tasmania's key tourism icons. Extinction in the wild will have long-term impacts on Tasmanian native ecosystems and economy. This study will provide critical genetic data and tools to monitor and prioritise conservation strategies, including insurance populations and disease suppression, aimed at preventing extinction. It will strengthen ongoing conservation programs carried out by the Save the Tasmanian Devil Program and will help publicise the plight of the devil both nationally and internationally.

LP0989577 Dr SC Barry; Prof H Zola; A/Prof RJ D'Andrea; Mr I Lewis

Approved Project Title **Differentiation of Cord Blood Stem cells into Thymus (T) cells with regulatory phenotype and function**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating/Partner Organisation(s)

Women's and Children's Health Research Institute
CELLSENSE PTY LTD

Administering Organisation The University of Adelaide

Project Summary

This project will develop technologies for a stem cell therapy platform based on cord blood stem cells, to enable treatment of autoimmune diseases or transplants. Building on the University of Adelaide's frontier demonstration of differentiation of regulatory Thymus (T) cells from cord blood stem cells, the project will develop techniques to expand the numbers of T cells generated. This has the potential to maintain Australia's lead in differentiation of cord blood stem cells and to provide a significant breakthrough in potential treatments of autoimmune diseases (e.g. type 1 diabetes) or transplantation. These diseases affect both a healthy start to life and healthy ageing, and an Australian invention to treat or cure them would have global impact.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989805 Dr P Bi; A/Prof DL Pisaniello; Prof KA Parton; Prof P Weinstein; A/Prof G Han; Dr M Nitschke; Dr A Saniotis
Approved Project Title **Heatwaves, population health, and emergency management in Australia-a qualitative study**
2009 : \$ 70,000
2010 : \$ 62,000
Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

SA Department of Health

Administering Organisation The University of Adelaide

Project Summary

This is the first qualitative study on emergency management mechanism to heatwaves in Australia. It will also explore relevant emergency and health specific adaptation strategies for heatwaves in different population settings. The results will help relevant government agencies for policy-making, such as public service and resource allocation, infrastructure establishment, disaster prevention and response including establishing the national heatwaves response system. They will also help relevant industry for their adaptation to heatwaves, ie aged care and energy industries. The results will also benefit local communities, especially those from disadvantaged groups such as indigenous Australians and aged population.

LP0989420 Prof BW Brook; A/Prof MB Araujo; Dr DA Fordham; Dr JN Foulkes
Approved Project Title **Planning for a transformed future: Modelling synergistic climate change and land use impacts on biodiversity**
2009 : \$ 151,000
2010 : \$ 200,000
2011 : \$ 170,000
Primary RFCD 2799 OTHER BIOLOGICAL SCIENCES

Collaborating/Partner Organisation(s)

Department for Environment and Heritage, Government of South Australia

Department of Water, Land and Biodiversity Conservation, Government of South Australia

City of Onkaparinga

Adelaide and Mount Lofty Ranges NRM Board

Administering Organisation The University of Adelaide

Project Summary

Climate change poses a dire threat to Australia's biodiversity and natural resources due to its all-encompassing reach and the speed at which human-driven changes are taking place in already heavily modified systems. The proposed research, on modelling the synergistic impacts of anthropogenic threats, will provide new knowledge and innovative solutions for protecting unique ecosystems facing severe environmental challenges this century. The validation of these new methods, which aim to capture ecological responses to global change, will represent a major and timely addition to the national research capability on climate change adaptation, and add to Australia's reputation as a global leader in the field of ecology.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989371 A/Prof PH Delfabbro; Dr EO Fernandez; Dr LJ Kettler

Approved Project Title **A national comparative analysis of child, family and service factors contributing to successful and unsuccessful reunification outcomes in out-of-home care**

2009 : \$ 111,000

2010 : \$ 217,000

2011 : \$ 178,000

Primary RFCD 3702 SOCIAL WORK

Collaborating/Partner Organisation(s)

Department for Families and Communities

Department for Child Safety

Department of Disability, Housing and Community Services

NSW Department of Community Services

Department for Human Services (Victoria)

Department for Families, Housing, Community Services and Indigenous Affairs

Department of Health and Human Services

Administering Organisation The University of Adelaide

Project Summary

This project will inform policies relating to the sustainability of current numbers in care as well as decision-making relating to the safe return of children to their families. Insights will be obtained into the multiple factors that contribute to successful reunification and post-reunification outcomes. The study will help to identify children most at risk of remaining in care (e.g., indigenous children), review structural decision-making tools or specialist services to assist children to return home, and provide a nationally tested methodology for studying, recording, and measuring reunification processes and outcomes.

LP0989478 Prof GB Fincher; Prof A Bacic; Dr K Dhugga; Dr JA Rafalski

Approved Project Title **Regulation of Cellulose Biosynthesis in Commercially Important Cereal Crop Species**

2009 : \$ 362,000

2010 : \$ 280,000

2011 : \$ 362,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

DuPont-Pioneer

Administering Organisation The University of Adelaide

Project Summary

The long term strategic research alliance with DuPont Pioneer will lead to the development of breakthrough science in emerging technologies that are relevant: a) to agricultural production, b) to human health and c) to renewable bio-fuel production from crop residues. The alliance will attract significant international investment in Australian research and foster an intellectual environment for world-class research training of postgraduate students and postdoctoral scientists, in both a higher education and an industry context.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990065 Prof GJ Hugo; Prof GA Wittert; Dr RJ Adams; Prof L Cobiac; Prof M Daniel; Prof CC Findlay; A/Prof AW Taylor; A/Prof DH Wilson; Prof HR Winefield; Mr AL Woollacott; Prof R Ruffin

Approved Project Title **Australia's Baby Boomer Generation, Obesity and Work - Patterns, Causes and Implications**

2009 : \$ 221,000
2010 : \$ 207,000
2011 : \$ 213,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Queen Elizabeth Hospital Research Foundation
 Workcover SA
 Council on the Ageing
 SA Health

Administering Organisation The University of Adelaide

Project Summary

In Australia's ageing crisis, baby boomers play a key role. Not only will they double the size of the aged population and its ratio to the workforce age group but the extent to which they remain in the workforce and their health will be crucial to future national productivity and prosperity. Baby Boomers have the highest level of obesity of any Australian age cohort and this threatens to seriously reduce their workforce participation and productivity and increase chronic disease incidence. There is a narrow closing window of opportunity for intervention which will reduce obesity and improve health and workforce outcomes.

LP0990019 A/Prof MM Lewis; Dr B Ostendorf

Approved Project Title **Spatial and temporal monitoring of soil erosion risk with satellite imagery**

2009 : \$ 59,000
2010 : \$ 61,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

Collaborating/Partner Organisation(s)

Dept. Water, Land and Biodiversity Conservation

Administering Organisation The University of Adelaide

Project Summary

This project is directed towards Sustainable farm practices, one of the national priorities in the Caring for Our Country program. The satellite image-based monitoring system will provide new information about the changing distribution of erosion risk in seasonal cropping systems, and identify areas where agricultural practices significantly influence this risk. The research will allow landholders, regional, state and national authorities to better target effort towards sustainable land management, and improve monitoring and reporting of land condition across broad agricultural regions. Dynamic monitoring of erosion risk will also track landscape conditions and farmer responses to changing climate.

LP0989780 Dr T Lu; Mr B Koch; Mr P Wighton

Approved Project Title **The study and development of a 3D real-time stockpile management system**

2009 : \$ 26,140
2010 : \$ 26,140
2011 : \$ 26,140

Primary RFCD 2907 RESOURCES ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

MatrixGroup (CMS) Pty Ltd

Administering Organisation The University of Adelaide

Project Summary

By successfully completing this project, the efficiency of existing infrastructure investments in industries involved in bulk material handling (inclusive of minerals, grain, sugar and woodchips) will be largely improved. This will allow such industries to contain costs and thus increase international competitiveness. Efficiencies gains (in these industries) to date have been in recover and processing with little attention to stockyard and movement within the stockyards. The industries sectors in which will receive the greatest benefits are in rural and remote Australia. There is also the ability of the system to be exported to overseas clients, particularly in the mining sector.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989605 Prof TM Monro; Dr H Ebendorff-Heidepriem
Approved Project Title **Optical fibre dip-sensors for in-situ environmental monitoring**
2009 : \$ 188,000
2010 : \$ 171,000
2011 : \$ 132,000
Primary RFCD 2911 ENVIRONMENTAL ENGINEERING
APA(I) Award(s): 1
Collaborating/Partner Organisation(s)
Micromet Pty Ltd
Administering Organisation The University of Adelaide

Project Summary

This project will continue to build Australia's reputation as a global leader in both the science and technology of emerging optical fibres, which is an enabling field of research with enormous number applications in medicine, defence, and sensing. It will be an excellent vehicle for educating young physicists and engineers in Australia. The new class of low-cost environmental sensors to be created here will provide benefit to Australia, enabling environmental and agricultural managers to more effectively monitor and manage natural resources such as water and nutrients and will lead to a more productive and sustainable economy.

LP0989223 Prof O Schmidt; Prof RT Roush; Prof AM Shelton; Dr RV Glatz
Approved Project Title **Mechanisms and management of inducible tolerance to synthetic insecticides and Bacillus thuringiensis (Bt)-formulations in Australian populations of diamondback moth**
2009 : \$ 40,000
2010 : \$ 40,000
2011 : \$ 40,000
Primary RFCD 2703 MICROBIOLOGY
Collaborating/Partner Organisation(s)
Dow AgroSciences Australia Ltd
Syngenta Crop Protection Pty Limited
Du Pont Australia Ltd
Administering Organisation The University of Adelaide

Project Summary

Insects have a cunning ability to respond to damaging environments by evolving genetic resistance or mobilising metabolic tolerance mechanisms. Recent observations of inducible tolerance to synthetic and biopesticides, which can be transmitted to offspring by a maternal effect has the potential to cause ecological and economic problems in agricultural production. We will use field-collected Diamondback moth (DBM), a major insect pest in canola and brassica vegetable crops, to investigate the genetic implications of inducible tolerance for the integrated management of DBM and for the design of new resistance management strategies.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989138 Dr KL Wilkinson; Prof SD Tyerman; Dr S Fuentes; Dr D Cozzolino; Ms LE Rose

Approved Project Title **The impact of vineyard exposure to smoke on vine physiology and the composition of grapes and wine**

2009 : \$ 82,554
2010 : \$ 82,554
2011 : \$ 82,554

Primary RFCD 3003 HORTICULTURE

Collaborating/Partner Organisation(s)

The Yalumba Wine Company
Primary Industries and Resources SA
Brown Brothers
Fosters Group Ltd.

Administering Organisation The University of Adelaide

Project Summary

Taint in grapes and wine as a consequence of vineyard exposure to smoke has resulted in a decline in product quality and significant financial losses for grape and wine producers throughout Australia. Given the close proximity of many Australian wine regions to areas of bush and forest and the predicted continuation of warm, dry climatic conditions, the incidences of vineyard smoke exposure is expected to increase in the future. The project aims to establish grape and wine production methods which can be employed by industry to counter the effects of smoke on grape and wine composition, and to minimise smoke taint in finished wine; with clear economic benefits for grape-growers and wine producers.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

University of South Australia

LP0989533 A/Prof DM Bagshaw; Dr L Zannettino; Dr SC Wendt

Approved Project Title **Preventing the financial abuse of older people by a family member: Designing and evaluating older-person-centred models of family mediation**

2009 : \$ 33,000

2010 : \$ 43,000

Primary RFCD 3903 JUSTICE AND LEGAL STUDIES

Collaborating/Partner Organisation(s)

Department for Families and Communities

Office for the Public Advocate

Relationships Australia

Alzheimers Australia SA

Guardianship Board

Administering Organisation University of South Australia

Project Summary

The financial abuse of older people is a significant social problem that is likely to intensify as Australia's ageing population continues to rise exponentially over the next twenty years. This project engages a broad range of stakeholders, including older people and their families, in the process of developing specialised models of family mediation to reduce the incidence and severity of financial abuse within a framework that promotes social sustainability and family cohesion. The outcomes of the project, therefore, will have a direct and positive impact on policy and practice in the social and economic care of older people.

LP0989689 A/Prof SR Grano; Dr SL Harmer-Bassell; Dr I Ametov

Approved Project Title **Matching flotation concentrate composition to downstream processing in copper production at the Olympic Dam operations of BHP Billiton.**

2009 : \$ 150,000

2010 : \$ 153,000

2011 : \$ 156,000

Primary RFCD 2907 RESOURCES ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

BHP Billiton Olympic Dam Corporation Pty Ltd

Administering Organisation University of South Australia

Project Summary

This research is important for the Australian and South Australian economies. There are both large capital and operating costs benefits if a successful and robust mineral separation can be achieved. Being able to separate different copper sulphide minerals in copper concentrates will have global significance. In the particular case of Olympic Dam mine, the impact of being able to separate the copper sulphide minerals at the mineral processing stage is a significant reduction in operating costs, which is a result of reduced ore handling, mining and smelting costs.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989758 Prof KP Green; A/Prof SJ Tanner; A/Prof MH Meadows; Prof Dr ML Pearson; Dr AR Romano; Ms JF Skehan; Ms CM McMahon
Approved Project Title **Vulnerability and the news media: Investigating print media coverage of groups deemed to be vulnerable in Australian society, and the media's understanding of their status**
2009 : \$ 30,000
2010 : \$ 30,000
Primary RFCD 4001 JOURNALISM, COMMUNICATION AND MEDIA

Collaborating/Partner Organisation(s)

Special Olympics Australia
Journalism Education Association
Australian Press Council
Hunter Institute of Mental Health
Dart Center for Journalism and Trauma Australasia
Media, Entertainment and Arts Alliance
Australian Multicultural Foundation

Administering Organisation University of South Australia

Project Summary

The media plays a major role informing society about itself. Today, there are considerable divisions within society, sometimes based upon misunderstanding, sometimes ignorance. This project seeks to break down those divisions by helping to train journalists to report knowledgeably on vulnerable groups. By developing protocols which journalists can adopt when reporting on vulnerable groups, the project will add to greater understanding within society about the positive contributions these groups make to the development of Australia and even to international relations.

LP0989229 Dr D Losic; A/Prof J Addai-Mensah; A/Prof IR Neering
Approved Project Title **Advanced Nanoscale Materials Engineered from Diatomaceous Earth**
2009 : \$ 60,000
2010 : \$ 60,000
2011 : \$ 60,000
Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Collaborating/Partner Organisation(s)

Mount Sylvania Diatomite Pty. Ltd

Administering Organisation University of South Australia

Project Summary

Using natural materials of diatomaceous earth (DE) as a cheap and available resource by applying synthetic routes this project is directed towards the innovative development of new nanoscale materials with advanced properties. New mesoporous materials with intricate 3-D structures and nano sized features will be engineered from diatom silica for use in demanding applications such as separation and catalysis. These research outcomes will enhance Australia's capacity in frontier technology and advanced materials, as well as bringing a competitive advantage to local industry through the development of such advanced materials.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989890 Prof L Zhang; Dr J Slay

Approved Project Title **Extraction of Electronic Evidence from Telephone Conversations Carried by the Voice over Internet Protocol (VoIP)**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 3904 LAW ENFORCEMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Australian Federal Police

Administering Organisation University of South Australia

Project Summary

The national benefits of this project are that it meets the National Priority of Safeguarding Australia and the results of this project can serve as a major input into a current Australian Government and Defence initiatives in electronic evidence and intelligence collection. It will play a significant part in satisfying the Australian community that steps are being taken to develop techniques for monitoring the criminal use of the Internet for communication and transfer of information. It will serve to develop niche Australian research expertise in this very specialized international field.

LP0989240 A/Prof LY Zou; Dr L Wang; Mr N Corby

Approved Project Title **New nanocomposites of porous materials and visible light sensitive TiO₂ for efficient wastewater purification**

2009 : \$ 55,000

2010 : \$ 55,000

2011 : \$ 55,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Collaborating/Partner Organisation(s)

City West Water Limited

Administering Organisation University of South Australia

Project Summary

The innovative newly proposed materials can trap and efficiently decompose dissolved organics in the same process, without generating any waste for disposal. No UV is required and the solar radiation can be efficiently used. The proposed research will be a significant breakthrough in the field of water treatment that reduces energy consumption, uses low cost materials and provides a real solution. The research findings will be useful to a wide spectrum of manufacturing industries which are currently generating slightly contaminated wastewater, and will be beneficial to the community in general. At the same time, the industries will be a step forward toward sustainable manufacturing.

Western Australia

Curtin University of Technology

LP0989326 A/Prof A Heitz; A/Prof CA Joll; Prof U von Gunten; Dr KL Linge

Approved Project Title **Treating wastewater for potable reuse: removal of chemicals of concern using advanced oxidation processes**

2009 : \$ 290,000

2010 : \$ 155,000

2011 : \$ 155,000

Primary RFCD 2599 OTHER CHEMICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Water Corporation of Western Australia

GHD

Administering Organisation Curtin University of Technology

Project Summary

The project promotes Australia as a leader in water reuse technology and is of benefit to reuse schemes globally. Several major reuse schemes are planned for Australia and it is well recognised that robust science is needed for public confidence. Community perception is a serious barrier to potable reuse and the results from this project will provide essential and independent information for informed decision making. The oxidation processes proposed will improve the quality of both recycled water and waste brine, providing environmental and economic benefit. This is particularly significant for regional Australia, where there is substantial demand for both water reuse and cost-effective waste disposal in the absence of ocean discharge.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Murdoch University

LP0989396 A/Prof UM Ryan; A/Prof ID Robertson

Approved Project Title **Determining the impact of protozoan pathogens and strongyle worms on prime lamb production**

2009 : \$ 95,000

2010 : \$ 100,000

2011 : \$ 95,000

Primary RFCD 3005 VETERINARY SCIENCES

Collaborating/Partner Organisation(s)

Dardin Agri-Holdings (Aust) Pty. Ltd.

Administering Organisation Murdoch University

Project Summary

This research will benefit wool and prime lamb industries nation-wide as sheep scouring is prevalent in high-rainfall areas across Australia. Data generated from the project will be used to educate farmers and reduce the financial burden of sheep scouring. This project will also enhance Australia's reputation in the disease management sector and will result in reduced risk to public health due to a better understanding and management of zoonotic parasite and microbacterial contamination of carcasses and water catchments.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

The University of Western Australia

LP0989470 Prof DG Blair; Dr L Ju; Dr A Veryaskin; Dr P Wolfgram; Mr H Golden

Approved Project Title **Advanced Electromagnetic Sensors and Magnetic Gradiometers for Natural Resources Exploration and Future Space Missions**

2009 : \$ 180,000

2010 : \$ 220,000

2011 : \$ 200,000

Primary RFCD 2499 OTHER PHYSICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Gravitec Instruments (AU) Pty Ltd

Fugro Airborne Surveys Pty Ltd

Administering Organisation The University of Western Australia

Project Summary

Australia will benefit from the long-standing world-class mining exploration industry. The new magnetic gradiometer system would greatly enhance their arsenal of geophysical exploration tools, especially for the detection of both magnetically and/or conductive minerals like nickel sulphide. Due to the inherent skin depth issues of conductive cover, a unique condition in Australia, a low frequency electromagnetic survey system is one of the best methods to penetrate the cover and investigate deeper geological structures. The low frequency isolation system developed in this project will improve the survey instrument performance down to 4Hz, providing capability to explore resources about 50-100% deeper than existing instrumentation allows.

LP0989936 Prof L Cheng; Dr DJ White; Prof MF Randolph

Approved Project Title **On-Bottom Stability of Large Diameter Submarine Pipelines**

2009 : \$ 100,000

2010 : \$ 100,000

2011 : \$ 100,000

Primary RFCD 2908 CIVIL ENGINEERING

Collaborating/Partner Organisation(s)

Woodside Energy Limited

Administering Organisation The University of Western Australia

Project Summary

Offshore oil and gas extraction contributes approximately \$17 billion annually to Australian economy. As the extraction activities increase, the length of pipelines being installed in Australian waters increases exponentially. The typical cost of a large diameter pipeline on the North West Shelf (NWS) of Australia is approximately \$4.5 million/km. On-bottom stabilisation measures account for approximately 30% of the total cost. It is expected that the outcomes of this project will enable significant cost savings for the new projects currently being developed such as Pluto, Browse, Sunrise and Greater Gorgon, and will provide the scientific evidence that will underpin the life extension reviews of existing trunklines.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0990083 Prof JM Dell; Dr RC Woodward; Dr M Martyniuk; Dr RD Jeffery

Approved Project Title Investigation of novel magneto-optic materials exhibiting high Faraday figure of merit

2009 : \$ 130,000
2010 : \$ 160,000
2011 : \$ 160,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)
ST Synergy Ltd

Administering Organisation The University of Western Australia

Project Summary

Magneto-optical materials have a wide range of potential applications in consumer products, telecommunications and defence. Nanotechnologies based on these materials offer an even broader range of emerging applications. Understanding and participating in the development of magneto-optic technologies will therefore be critical to maintaining Australia's knowledge base and expertise in future technological advances. Given the early stages of development of these technologies, Australia's expertise in material science and the patent rights held by Australian companies in this area, Australia has the opportunity to make major contributions to this field, and the potential to capitalise on the application of these technologies in niche markets.

LP0989433 Dr C Gaudin; Prof MJ Cassidy; Dr B Bienen; Dr OA Purwana; Dr M Quah

Approved Project Title A novel foundation to extend the operation of mobile structures into deeper water

2009 : \$ 50,000
2010 : \$ 60,000
2011 : \$ 65,000

Primary RFCD 2908 CIVIL ENGINEERING

LIF Award(s): 1

Collaborating/Partner Organisation(s)
Keppel Offshore and Marine Pte Ltd

Administering Organisation The University of Western Australia

Project Summary

Oil and gas is a key industry in Australia, contributing A\$17 billion to the economy. However, with the large accessible reserves in shallower waters becoming exhausted, Australian oil and gas companies require new technologies to extend their capabilities. The research in this proposal addresses this concern, providing an extension of the operational depth range of mobile jack-up platforms from 120 to 200 m. This creates the opportunity to develop the significant number of Australia's smaller gas fields that are currently uneconomical to exploit. The proposed project will contribute to the future competitiveness of Australia's oil and gas industry and ensuring energy supply for the sustained growth of the Australian economy.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989847 Dr HM Leonard; Dr C Bower; Prof N de Klerk; Prof GM Llewellyn; Prof SL Einfeld; Prof TR Parmenter; Prof BJ Tonge; Dr V Riches; A/Prof NG Lennox; Dr R Chalmers; Mr J Brigg; A/Prof GM Lewis; Ms J Softly

Approved Project Title **The transition from secondary school to adulthood: Experiences and life outcomes for youth with an intellectual disability and their families**

2009 : \$ 91,000

2010 : \$ 77,000

2011 : \$ 83,000

2012 : \$ 69,000

2013 : \$ 45,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Disability Services Commission

Department of Education and Training

Edge Employment Solutions

Down Syndrome Association of WA

Administering Organisation The University of Western Australia

Project Summary

This project seeks to explore the challenges faced and outcomes achieved by students with an intellectual disability as they move from secondary school into adult life. The study will investigate the factors at an individual, educational, family, and societal level which positively and adversely affect outcomes for young people with an intellectual disability and their families. Family impacts can include significant loss of income as parents may have to cease employment to care for their young adult who has limited employment or day placement options. Gaining the knowledge to minimise the disruption to family life, which often occurs at this time of transition, will lead to strengthening Australia's social and economic fabric.

LP0989547 Prof Z Rengel; A/Prof CB Hinz; Dr AW Rate

Approved Project Title **Environmental risk assessment of acid sulfate soil formation and pollutant generation in Swan Coastal Plain**

2009 : \$ 180,000

2010 : \$ 180,000

2011 : \$ 180,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

Collaborating/Partner Organisation(s)

Water Corporation

RPS

ALS Laboratory Group

Administering Organisation The University of Western Australia

Project Summary

The urgency and importance of securing water sources for human use in a sustainable manner is dictated by drying climate and rapid population expansion in Australia. Dropping groundwater levels (less recharge, increased abstraction, enhanced drainage) result in formation of acid sulfate soils in oxidised layers that contain acid-bearing minerals. This project will produce an environmental risk assessment framework as a basis for (i) educated decisions regarding land development and soil disturbance vs conservation as well as (ii) identifying areas suitable for water abstraction from groundwater resources. This will ensure sustainable use of precious groundwater resources in this drying continent of ours.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989409 Prof GJ Venville; Dr NE Longnecker; Prof LJ Rennie

Approved Project Title **Beyond the Beaker: Maximising the Impact of a Science Careers Program on High School Students' Attitudes towards Science**

2009 : \$ 70,000

2010 : \$ 65,000

2011 : \$ 65,000

Primary RFCD 3302 CURRICULUM STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Scitech Discovery Centre

Chevron Australia Pty Ltd

Administering Organisation The University of Western Australia

Project Summary

The falling numbers of young people choosing to pursue the study of science has become a matter of national debate and societal concern. Australia's international competitiveness is increasingly dependent on high-level, science-based technical skills, knowledge and innovation. This research will inform the national impetus required from government, business and education sectors to take action by providing research-informed models about how to positively influence students' attitudes towards science and science subject selection. These models will provide critical information about how to secure the next generation of scientists in Australia and a science skilled and knowledgeable workforce and general population.

LP0989368 Prof D Zhang

Approved Project Title **Homogeneous Combustion Catalysts for Efficiency Improvements and Emission Reduction in Diesel Engines**

2009 : \$ 170,000

2010 : \$ 100,000

2011 : \$ 70,000

2012 : \$ 170,000

Primary RFCD 2999 OTHER ENGINEERING AND TECHNOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Fuel Technology Pty Ltd

BHP Billiton Iron Ore Pty Ltd

Administering Organisation The University of Western Australia

Project Summary

Australia currently consumes about 25 billion litres of diesel annually through the mining industry, road transportation and electricity generation for remote communities which presents a significant cost and carbon footprint. A small reduction of say 2.5% in diesel consumption nationwide by improving engine performance and energy efficiency can result in more than \$0.5 billion in savings and a reduction of 1.75 million tonnes in greenhouse gas emission annually. The homogeneous combustion catalysts, to be developed in this research for direct doping into diesel supply system, will help realise these objectives and contribute to the development of an environmentally sustainable Australia.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Tasmania

University of Tasmania

LP0990010 Dr A Martin; Dr KA Sanderson; Dr J Scott; A/Prof PA Brough

Approved Project Title **Promoting employee mental health through the development of managers' psychological capital: A controlled field experiment.**

2009 : \$ 81,000

2010 : \$ 77,000

2011 : \$ 53,000

2012 : \$ 34,000

Primary RFCD 3801 PSYCHOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Beyond Blue

Workcover

Tasmanian Chamber of Commerce and Industry

Administering Organisation University of Tasmania

Project Summary

Depression significantly impacts Australian communities and costs the economy approximately 12 million days in lost productivity each year. By delivering a mental health promotion program to managers of small-medium enterprises, this study will enhance the psychological wellbeing and mental health literacy of managers in a sector of the business community often neglected in occupational health research. The program targets managers within Tasmania, a setting representing regional communities in which people have a higher risk of mental ill-health problems.

LP0989609 A/Prof CL Mohammed; Dr PJ Sunnucks; Dr M Glen; Dr SJ Grove; Dr TJ Wardlaw; Prof JR Spence; Dr EG Brockerhoff

Approved Project Title **Managing for persistence of the saproxylic biota in production forest landscapes**

2009 : \$ 100,000

2010 : \$ 85,000

2011 : \$ 85,000

Primary RFCD 3006 FORESTRY SCIENCES

Collaborating/Partner Organisation(s)

Forestry Tasmania

Ta Ann Tasmania

Administering Organisation University of Tasmania

Project Summary

The pattern of 'fragmentation' and 'matrix alteration' being examined in this study mirrors not just other areas of Tasmania but also much of south-eastern Australia. The research addresses a conservation biology issue in a new and novel way and has been developed with, and is supported by an industry partner working in multiple-use forest management, so the research provides both immediate applied and strategic outcomes. These outcomes directly relate to forest sustainability especially the management of the biodiverse dead wood habitat including the harvesting of fuelwood.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989727 A/Prof GM Woods; Dr K Belov; Mr A Kreiss

Approved Project Title **An immunological and immunogenetic approach to understand and to protect Tasmanian devils against Devil Facial Tumour Disease**

2009 : \$ 140,000

2010 : \$ 130,000

2011 : \$ 130,000

Primary RFCD 3005 VETERINARY SCIENCES

APDI Mr A Kreiss

Collaborating/Partner Organisation(s)

Department of Primary Industries and Water

Administering Organisation University of Tasmania

Project Summary

The Tasmanian devil is the world's largest living carnivorous marsupial. From an environmental perspective, devils play a fundamental role through scavenging. Dead and dying animals were removed nightly from Tasmania's landscape and therefore decaying carcasses did not require removal. Loss of this top order scavenger will alter the balance of biodiversity and non-native animals (such as foxes, feral cats, crows, and even European wasps) will then compete for this scavenger role. As these animals are non-selective they will also prey on living animals and many of Tasmania's native animals (such as Eastern barred bandicoot, potoroos, quolls etc.) will be seriously threatened and our biodiverse landscape could be irreversibly altered.

Northern Territory

Charles Darwin University

LP0989485 A/Prof MJ Lawes; Mr AD Griffiths

Approved Project Title **Assessing the viability of ecosystem processes in habitat fragments: lessons from land-clearing in the tropical savannas**

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCID 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

NT Department of Natural Resources, Environment and the Arts

Administering Organisation Charles Darwin University

Project Summary

Climate change and land degradation in southern Australia is increasing the demand for agricultural land in northern Australia. Broad scale land-clearing is prohibited in all Australian jurisdictions apart from the Northern Territory. However, our understanding of the impact of fragmentation on ecosystems processes in tropical savannas is poor. This research will set new standards in pursuit of sustainability and conservation objectives within a regional planning context for northern Australian landscapes. We aim to contribute to a sustainability framework and integrated planning process for tropical savannas, so that it reaches its agricultural potential in a sustainable way, while maintaining the area's natural systems and biodiversity.

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

LIF Award(s): 1

APA(I) 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 Jagggar; 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 TRAnstitions 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.

