

**Summary of Successful Proposals by State by Organisation for Linkage Projects to  
Commence in July 2008**

**New South Wales**

Charles Sturt University	2
Macquarie University	5
The University of New England	2
The University of New South Wales	22
The University of Newcastle	6
The University of Sydney	11
University of Technology, Sydney	4
University of Western Sydney	3
University of Wollongong	8

**New South Wales** **63**

**Victoria**

Deakin University	4
La Trobe University	4
Monash University	13
RMIT University	7
Swinburne University of Technology	5
The University of Melbourne	28
Victoria University	3

**Victoria** **64**

**Queensland**

Griffith University	4
James Cook University	3
Queensland University of Technology	10
The University of Queensland	21

**Queensland** **38**

**South Australia**

The Flinders University of South Australia	1
The University of Adelaide	4
University of South Australia	10

**South Australia** **15**

**Western Australia**

Curtin University of Technology	6
Edith Cowan University	1
Murdoch University	1
The University of Western Australia	6

**Western Australia** **14**

**Tasmania**

University of Tasmania	4
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**Tasmania** **4**

**Australian Capital Territory**

The Australian National University	8
University of Canberra	2

**Australian Capital Territory** **10**

**Total Number of Grants** **208**

# Summary of Linkage Projects Proposals for Funding to Commence in 2008

## New South Wales

### Charles Sturt University

**LP0883952** Dr PG Spooner; A/Prof DM Watson; Dr GW Luck; Mr DS Valentine; Mr ID Temby

**Approved Project Title** **Managing agricultural landscapes to maximise biodiversity gains: the case of the regent parrot**

**2008 :** \$ 42,500

**2009 :** \$ 85,000

**2010 :** \$ 85,000

**2011 :** \$ 42,500

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 2

#### Collaborating/Partner Organisation(s)

Select Harvests Limited

Vic. Dept. Sustainability and Environment

**Administering Organisation** Charles Sturt University

#### Project Summary

This project provides crucial knowledge to achieve an Environmentally Sustainable Australia (National Research Priority) and meets a principal aim of the National Strategy for Ecologically Sustainable Development-to develop sustainable agriculture while protecting the biological resources on which they depend. We achieve this through a novel approach linking production targets and conservation trade-offs with agricultural landscape design and management. This information will underpin the development of policies to improve the environmental performance of Australian agriculture, ensure farming enterprises maximise benefits obtained from native ecosystems, and guarantee profitable and viable rural industries.

**LP0883913** Prof J Sumsion; A/Prof LJ Harrison; Ms F Press; A/Prof S McLeod; Prof BS Bradley; Dr J Goodfellow

**Approved Project Title** **What is life like for babies and toddlers in childcare? Understanding the 'lived experience' of infants through innovative mosaic methodology.**

**2008 :** \$ 29,067

**2009 :** \$ 63,209

**2010 :** \$ 51,617

**2011 :** \$ 17,475

**Primary RFCD** 3303 PROFESSIONAL DEVELOPMENT OF TEACHERS

APA(I) Award(s): 1

#### Collaborating/Partner Organisation(s)

Family Day Care Australia

KU Children's Services

**Administering Organisation** Charles Sturt University

#### Project Summary

High quality childcare provision is a continuing policy challenge for the Australian Government. Lack of public confidence in childcare contributes to Australia's relatively low female workforce participation and constrains economic growth. This study will increase public, professional and parental knowledge of what life in childcare is like for infants; assist parents to make informed choices about childcare; enhance carers' professional practice; and provide guidance to the National Childcare Accreditation Council and relevant government departments about how to improve the quality of infant childcare. It will also lead to better outcomes for infants and help to ensure their healthy start to life.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Macquarie University

**LP0884094** Prof AP Avolio; Prof MK Morgan; Dr A Qasem

**Approved Project Title** **Non-invasive measurement of intracranial pressure by means of transcranial doppler blood flow and central aortic pressure**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

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

AtCor Medical

**Administering Organisation** Macquarie University

#### **Project Summary**

The investigation will produce a device that will aid doctors measuring brain pressure without drilling holes through the skull. The device will use the technology of an Australian company that has the only patented system to deduce the pressure in the brain by measuring pressure close to the heart and the brain and by recording the pressure pulse wave at the wrist. The community benefit will be in terms of the safety and ease with which changes in pressure in the brain can be detected. It will also advance the world renowned Australian technology in a new area of application.

**LP0883671** Dr RJ Carman; Prof DM Kane; Prof RW Boswell

**Approved Project Title** **Power scaling of remote plasma sources for gallium nitride film growth with real-time monitoring of activated nitrogen species**

**2008 :** \$ 80,000

**2009 :** \$ 155,000

**2010 :** \$ 150,000

**2011 :** \$ 75,000

**Primary RFCD** 2403 ATOMIC AND MOLECULAR PHYSICS; NUCLEAR AND PARTICLE PHYSICS; PLASMA PHYSICS

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

BluGlass Ltd

**Administering Organisation** Macquarie University

#### **Project Summary**

Domestic, industrial and community lighting currently accounts for ~20% of the world's overall energy consumption. Commonly used incandescent lights are based on inefficient, century-old technologies. In contrast, light emitting diodes (LEDs) use ~80% less energy and last ~100 times longer. LED deployment will bring substantial economic and environmental benefits for Australia and globally. Next generation high-efficiency LEDs for lighting, will operate with reduced energy consumption, thus contributing to reaching future national targets for CO2 emission reduction. This project will achieve reduced production cost of a key LED material, and will support Australia's leadership in a growing global semiconductor manufacturing industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883892** Prof WL Griffin; Prof SY O'Reilly; Dr NJ Pearson

**Approved Project Title** **Composition, structure and evolution of the lithospheric mantle beneath southern Africa: improving area selection criteria for diamond exploration**

**2008 :** \$ 59,000

**2009 :** \$ 117,500

**2010 :** \$ 118,500

**2011 :** \$ 60,000

**Primary RFCD** 2601 GEOLOGY

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

De Beers Group Services

**Administering Organisation** Macquarie University

### **Project Summary**

The project will provide new insights into the detailed structure of the deep Earth (to about 250 km) and identify and predict zones of weakness that could focus kimberlite magmas that carry diamonds to the surface. A better understanding of the nature and location of these structures will lead to improved models for diamond exploration, enhancing the prospect of finding new deposits in Australia and abroad. Innovations in integrating information from geochemistry and geophysics, development of 3D imaging techniques, and extrapolation to past geological scenarios will provide new exploration tools, and also maintain our high international profile in research relevant to the National Priority on Developing Deep Earth Resources.

**LP0883516** Dr HM Pask; Dr DJ Spence; Prof JA Piper; Mr J Kerr Azevedo; Mr RD Combe; Dr J Caiado de Castro

**Approved Project Title** **A wavelength-versatile visible laser for ophthalmic instrumentation**

**2008 :** \$ 30,000

**2009 :** \$ 60,000

**2010 :** \$ 64,000

**2011 :** \$ 34,000

**Primary RFCD** 2404 OPTICAL PHYSICS

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

Opto Global Pty Ltd

**Administering Organisation** Macquarie University

### **Project Summary**

Treatment of a wide range of retinal disorders can be enhanced by a range of treatment modalities using laser beams of different colours. The outcome of this project will be a new laser technology for ophthalmic applications which is unique in its versatility while reducing size and cost. This will allow our partner, Opto Global, to gain a unique market position for its ophthalmic products with flow-on benefits to the Australian economy and ultimately benefits to the community through improved clinical efficacy and patient outcomes. The frontier technology represented by these new laser devices is also applicable to other industries including medical aesthetics, colour projection and display, and defence systems.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883926** A/Prof MJ Withford; A/Prof JM Dawes; A/Prof MJ Steel; A/Prof DW Coutts; Mr BF Johnston; Dr DY Stepanov; Dr S Field

**Approved Project Title** **Enabling next-generation high-efficiency visible laser sources through advanced waveguide engineering**

**2008 :** \$ 65,000

**2009 :** \$ 139,000

**2010 :** \$ 139,000

**2011 :** \$ 65,000

**Primary RFCD** 2404 OPTICAL PHYSICS

APDI Mr BF Johnston

**Collaborating/Partner Organisation(s)**

Bandwidth Foundry International

**Administering Organisation** Macquarie University

**Project Summary**

Lithium niobate has the potential to become the silicon of the optoelectronic industry. In order to realise its potential, fundamental problems associated with long term stability and cost of integration need to be solved. This project will develop a new hybrid fabrication platform that circumvents the traditional approaches pursued in the past for introducing waveguides into a lithium niobate chip. This platform will enable the production of robust, low cost light sources for fields as diverse as biotechnology, environmental sensing and displays. This project will lead to new IP that will establish Australia as a leader in this field.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### The University of New England

LP0883389 Dr DW Hine; Dr J Scott

**Approved Project Title** **Combining Community Based Social Marketing and Technological Innovation to Combat Wood-Smoke Pollution in Regional Australia**

2008 : \$ 24,441

2009 : \$ 49,379

2010 : \$ 49,922

2011 : \$ 24,983

**Primary RFCD** 3801 PSYCHOLOGY

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

Armidale Dumaresq Council

SmartBurn Pty Ltd

Firewood Association of Australia Inc

Australian Home Heating Association Inc

**Administering Organisation** The University of New England

#### **Project Summary**

There is considerable evidence to suggest that wood smoke pollution represents a serious health threat. This project will provide valuable information about the relative effectiveness of social marketing and technology-based interventions to reduce wood smoke pollution, and how these interventions may be combined to maximise their impact. The resulting improvements in air quality may produce substantial health benefits for the residents of Australian communities that depend heavily on wood as a domestic heating fuel during winter months.

LP0883563 Prof L Unsworth; Dr AA Thomas; Mr P Maggs

**Approved Project Title** **Teaching effective 3D authoring in the middle school years: Multimedia grammatical design and multimedia authoring pedagogy.**

2008 : \$ 32,500

2009 : \$ 65,000

2010 : \$ 65,000

2011 : \$ 32,500

**Primary RFCD** 3302 CURRICULUM STUDIES

APA(I) Award(s): 1

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

Australian Children's Television Foundation

**Administering Organisation** The University of New England

#### **Project Summary**

This project addresses the National Research Priorities goal 'promoting an innovative culture and economy'. It provides radical re-thinking of literacy pedagogy essential in globalised knowledge-based economies mediated by digital multimedia literacies. 3D multimedia authoring pedagogy, emphasizing playful innovation and explicit knowledge of multimedia design, will increase digital-age student engagement in learning. The Australian Children's Television Foundations' Kahootz is uniquely effective, highly motivating authoring software for schools. What is needed is a thoroughly researched multimedia authoring pedagogy to fully realise Australian leadership potential in renovating literacy pedagogy for the digital multimedia age.

# Summary of Linkage Projects Proposals for Funding to Commence in 2008

## The University of New South Wales

**LP0883262** Prof C Barner-Kowollik; Dr PJ Barker

**Approved Project Title** **Establishing In-Depth Understanding of Molecular Degradation Processes in Acrylic Based Polymer Coil-Coatings for Domestic Roofing Applications**

**2008 :** \$ 30,000

**2009 :** \$ 43,500

**2010 :** \$ 31,000

**2011 :** \$ 17,500

**Primary RFCD** 2505 MACROMOLECULAR CHEMISTRY

APA(I) Award(s): 1

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

BlueScope Steel Research

**Administering Organisation** The University of New South Wales

### **Project Summary**

The national benefit is multipronged: (i) BlueScope Steel will maintain its technology leadership through continued innovation by taking advantage of the scientific insights that the project delivers for the introduction of next generation long lasting coil coatings for steel, based on an environmentally friendly production processes. (ii) The application of mass spectrometry for the analysis of polymer degradation has been pioneered by the CI and BlueScope Steel. The project will demonstrate the power of this technique and secure Australia's place at the forefront of molecular polymer degradation research. (iii) The project has a strong educational component, training a PhD student at the interface of application and fundamental research.

**LP0883813** A/Prof LE Bilston; Ms J Brown; Dr J Hatfield

**Approved Project Title** **Optimising protection for motor vehicle rear seat occupants**

**Project Title**

**2008 :** \$ 52,137

**2009 :** \$ 104,275

**2010 :** \$ 104,275

**2011 :** \$ 52,137

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

APDI Ms J Brown

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

NSW Road Safety Centre, Roads and Traffic Authority of NSW

**Administering Organisation** The University of New South Wales

### **Project Summary**

Road trauma is a leading cause of death and disability for Australians under 45 years of age. Recent technological advances in vehicle safety have focussed on drivers and front seat passengers, leaving the rear seat lagging behind. This project will address gaps in protection for rear seat passengers, including increasing correct use of child restraints for young passengers from non-English speaking families, and evaluating new and existing technologies for older passengers.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883655** Prof R Cavicchioli; Dr T Thomas; A/Prof M Guilhaus; Prof PR Munroe; A/Prof V Chen  
**Approved Project Title** **Improving the sustainability of Australia's water resources: an effective approach for diagnosing and treating foulants on water recycling membrane filters**  
**2008 :** \$ 204,606  
**2009 :** \$ 369,778  
**2010 :** \$ 360,198  
**2011 :** \$ 195,025  
**Primary RFCD** 2708 BIOTECHNOLOGY

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

Aeris Technologies Ltd

**Administering Organisation** The University of New South Wales

### **Project Summary**

By determining ways to diagnose and treat fouling problems we will have effectively solved a critical problem in the water recycling industry. By creating more efficient and sustainable ways of using water, we will transform the effectiveness of a wealth of Australian industries that increasingly rely on the efficient use of water (e.g. mining, agriculture, textiles, energy). By reducing the demand for water (by effectively recycling it), and the energy requirements (by efficiently recycling it), we will increase national wealth and provide significant social and environmental benefits to all Australians.

**LP0883838** Prof PM Curmi; Prof SN Breit; Dr CP Marquis  
**Approved Project Title** **Structural and pharmaceutical studies on a novel human protein, MIC-1**  
**2008 :** \$ 81,521  
**2009 :** \$ 168,111  
**2010 :** \$ 175,516  
**2011 :** \$ 88,926  
**Primary RFCD** 2708 BIOTECHNOLOGY

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

St Vincent's Hospital

**Administering Organisation** The University of New South Wales

### **Project Summary**

Cancer and obesity are two of the main health problems facing Australia, as reflected by the National Research Priority: Promoting and Maintaining Good Health. This project will develop new diagnostic tools for early cancer detection and prognosis using the protein, MIC-1. MIC-1 is responsible for cachexia, a wasting disorder responsible for 25% of cancer deaths, which has no effective therapy. MIC-1 and antibodies neutralising MIC-1 may provide therapeutic agents to control cancer cachexia and severe obesity. The project will optimise these molecules for therapeutic uses. These diagnostic and therapeutic tools will form the basis of a spin-off company for commercialisation.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883884** A/Prof PH Dawson; A/Prof PA Wilksch; Dr NH Abramson; Prof WJ Mitchell; Dr DC Brotherton-Ratcliffe

**Approved Project Title** **Destination: developing hologram recording and replay technologies to enable the world's largest mass audience viewing of deep volume water images**

**2008 :** \$ 174,986

**2009 :** \$ 303,736

**2010 :** \$ 167,250

**2011 :** \$ 38,500

**Primary RFCD** 4103 CINEMA, ELECTRONIC ARTS AND MULTIMEDIA

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

Federation Square Pty Ltd  
Australia Council for the Arts  
Geola Digital uab  
Geola Technologies Ltd

**Administering Organisation** The University of New South Wales

### **Project Summary**

The exhibition of 'Destination', the world's largest hologram installation at Federation Square in Melbourne, will impact both local and international audiences through engagement with the globally important subject - WATER. Wide public access to the new perceptions of water available through the holograms will be accessible in progress via web interface, broadcast live video and an international conference hosted at Federation Square. The technological advances forged by the international and national multi-disciplinary expert team (media art, urban design, holography and laser technology) will establish a strong knowledge base and expertise in Australia thus providing opportunities for PhD students.

**LP0884099** Dr EO Fernandez

**Approved Project Title** **Care Matters: Capturing Outcomes for Children in Foster Care**

**2008 :** \$ 29,563

**2009 :** \$ 64,994

**2010 :** \$ 35,431

**Primary RFCD** 3702 SOCIAL WORK

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

Barnardos Australia

**Administering Organisation** The University of New South Wales

### **Project Summary**

The issue of child protection is high on the national agenda. Research on outcomes of children placed in protective care has considerable potential to yield important national benefit given that failures in this system result in social breakdown and emotional and financial cost. The ability of children and young people in care to form subsequent interpersonal relationships and achieve healthy developmental outcomes is important to social stability in Australian Society and elsewhere. Major outcomes of the research will be the advancement of the scientific knowledge base on the dynamics of children's experience of reattachment with new families and the factors that promote or inhibit resilient outcomes for children.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884095** Prof KJ Fox; A/Prof GD Otto; Prof WE Diewert; Mr ED Connolly; Mr D Parham

**Approved Project Title** **Tackling the Tough Problems in Productivity Measurement: Infrastructure, Services and R&D**

**2008 :** \$ 132,662

**2009 :** \$ 208,080

**2010 :** \$ 190,885

**2011 :** \$ 180,840

**2012 :** \$ 150,129

**2013 :** \$ 84,756

**Primary RFCD** 3402 APPLIED ECONOMICS

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Australian Bureau of Statistics

Productivity Commission

**Administering Organisation** The University of New South Wales

### Project Summary

Productivity is seen as a main driver of economic growth and welfare improvements. Productivity indexes are used in a variety of policy contexts, in particular in determining the effectiveness (or otherwise) of government policies. Most industrialized countries have productivity accounts, but measurement problems persist and may even be more problematic in the future given an expansion in new goods and services. Improved productivity measurement and an improved understanding of its sources can inform aggregate and regional policy. The project includes collaboration with the Australian Bureau of Statistics and the Productivity Commission, with the participation of the Reserve Bank of Australia.

**LP0883548** Prof MA Green; Dr RJ Egan

**Approved Project Title** **Next generation evaporated and laser diode processed thin-film silicon-on-glass solar cells**

**2008 :** \$ 160,000

**2009 :** \$ 345,000

**2010 :** \$ 330,000

**2011 :** \$ 295,000

**2012 :** \$ 310,000

**2013 :** \$ 160,000

**Primary RFCD** 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

**Collaborating/Partner Organisation(s)**

CSG Solar Pty Ltd

**Administering Organisation** The University of New South Wales

### Project Summary

The project targets a new generation of low-cost silicon solar cell that will significantly reduce the costs of generating electricity from sunlight by depositing cells onto glass as it comes from a glass factory. Solar cells are presently the world's most rapidly growing energy source, with Australians and Australian companies already major players in the associated rapidly expanding industry. Solar cells represent the cleanest and most acceptable technology yet suggested for supplying the world's future energy needs. A cleaner future environment than otherwise likely is another expected outcome as is the creation of major new opportunities for Australian industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884143** Dr RR Harley; Mr JD Gillies

**Approved Project Title** **Video Art Online: from UBU Films to the Present**

**2008 :** \$ 21,453

**2009 :** \$ 40,985

**2010 :** \$ 43,768

**2011 :** \$ 24,236

**Primary RFCD** 4103 CINEMA, ELECTRONIC ARTS AND MULTIMEDIA

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

Museum of Contemporary Art  
d/Lux/MediaArts

**Administering Organisation** The University of New South Wales

### **Project Summary**

There is little Australian video art systematically presented online, nor is there a broad set of reference materials on this important area of artistic practice in Australia. This project will create an innovative way to store, catalogue, interpret and archive video art works using open source software that will be freely available to others to use and develop. This project presents significant for Australia by:(i) extending the reach and profile of two of Australia's most important new media and contemporary art institutions, (ii) making available open source solutions for online video archives to the cultural sector (iii) providing the broader Australian community access to video art works in a scholarly, easy-to-use repository.

**LP0884160** Prof RT Kingsford; Prof AH Arthington; A/Prof IM Suthers; Dr KM Jenkins; Prof N Saintilan; Dr MT Maher; Dr RG Creese; Dr TS Rayner

**Approved Project Title** **Fine-scale responses of freshwater fish to environmental flows in arid-zone rivers and wetlands**

**2008 :** \$ 69,897

**2009 :** \$ 108,652

**2010 :** \$ 75,774

**2011 :** \$ 37,019

**Primary RFCD** 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

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

New South Wales Department of Environment and Climate Change - Rivers and Wetlands Science

New South Wales Department of Primary Industries - Fisheries

New South Wales Department of Environment and Climate Change - Environmental Water and RiverBank

**Administering Organisation** The University of New South Wales

### **Project Summary**

The community is demanding that river health be improved to sustainable levels through increased river flows. This will come through the efficient use of available environmental water that supports the ecology of Australia's river systems. This project will substantially inform the operational management of water for native fish populations and other organisms to specific wetlands and will guide the delivery of environmental flows to maintain native fish stocks. The project will help management of declining fish populations and more generally wetlands by improving our understanding of the role of environmental flows.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884116** Prof M Loosemore; Ms JF Carthey; Prof AJ McMichael; Prof AJ Pitman; Dr V Chandra; Dr KB Dear; Mr M Meurisse

**Approved Project Title** **Assessing the adaptive capacity of hospital facilities to cope with climate-related extreme weather events: A risk management approach**

**2008 :** \$ 72,500  
**2009 :** \$ 145,000  
**2010 :** \$ 145,000  
**2011 :** \$ 72,500

**Primary RFCD** 3102 BUILDING

**Collaborating/Partner Organisation(s)**

NSW Department of Health  
 Queensland Health  
 Government of South Australia, Department of Health  
 NZ Ministry of Health

**Administering Organisation** The University of New South Wales

**Project Summary**

Given Australia's and New Zealand's relatively high exposure to climate extremes, the social, economic and health benefits of better managed hospital facilities are significant. Floods, bushfires, heatwaves and cyclones cost Australia over \$1.4bn/year and New Zealand over NZ\$43m/yr in disruption to communities, business productivity and damage to infrastructure. This research will help to mitigate these costs by protecting populations from the health risks associated with such events. The potential benefits will be most significant for those vulnerable communities at high risk such as the aged, the obese, the ill and those geographically exposed to more extreme weather events.

**LP0883728** Prof NH Lovell; Prof BG Celler; Dr J Basilakis; Dr NM Santamaria; A/Prof E Ambikairajah

**Approved Project Title** **Design of an electronic guideline-driven decision support framework for home and community telehealth settings**

**2008 :** \$ 100,500  
**2009 :** \$ 195,500  
**2010 :** \$ 185,000  
**2011 :** \$ 90,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

MedCare Systems Pty. Ltd.  
 HCF Ltd. / HCF Health and Medical Research Foundation  
 WA Health  
 NSW Health

**Administering Organisation** The University of New South Wales

**Project Summary**

With rapid advancements in the use of telecare-based health support in several emerging clinical areas, integrating these services within a stable guideline-driven decision support framework will support evidence-best practice in this setting, as well as improving efficiencies in clinical work practice and error minimisation through automation. The result could have a profound socio-economic impact on the community and a sizable impact on healthcare outcomes; notwithstanding the substantial contribution it has to advancing the knowledge of medical decision support systems, supporting the national technology focus on health technology interoperability, and raising the profile of Australia as the foremost leader in the telecare area.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884128** Prof NH Lovell; Prof AV Savkin; Dr PJ Ayre; Prof Dr FL Rosenfeldt; A/Prof RF Salamonsen

**Approved Project Title** **Hybrid Sensor-based Physiological Control of an Implantable Rotary Blood Pump**

**2008 :** \$ 70,000

**2009 :** \$ 140,000

**2010 :** \$ 140,000

**2011 :** \$ 70,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

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

Ventracor Limited

**Administering Organisation** The University of New South Wales

### **Project Summary**

With over 11 million people needing heart transplants worldwide and only 3000 donor hearts, an effective alternative therapy is needed. The Ventracor Ltd. rotary blood pump is one possible approach whereby a fully implantable mechanical device assists the failing heart. The innovative steps in this research proposal will be a means to robustly and safely control the speed of the pump to meet the metabolic needs of the body. Apart from the obvious health benefits for patients, this will provide the company with a huge market advantage that will also help to bolster the Australian medical device industry.

**LP0884100** A/Prof G Peng; Prof J Canning

**Approved Project Title** **Highly Multiplexed Fibre Sensor Systems for Structural Health Monitoring and Risk Assessment of Critical Transport Infrastructures**

**2008 :** \$ 18,000

**2009 :** \$ 36,000

**2010 :** \$ 36,000

**2011 :** \$ 18,000

**Primary RFCD** 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

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

Roads and Traffic Authority, NSW

**Administering Organisation** The University of New South Wales

### **Project Summary**

Safeguarding critical transport infrastructures is very much in the interest of Australian government and people. This project is to develop advanced photonic and telecommunication technologies for timely and reliably acquiring and processing key structural performance information. This will reduce structural failures and maintenance costs with reliable data of structure health monitoring and risk assessment.

**LP0883486** Prof RB Randall; Dr N Feng; Dr B Peeters

**Approved Project Title** **Advanced IC engine diagnostics**

**2008 :** \$ 15,000

**2009 :** \$ 27,813

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

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

LMS International

**Administering Organisation** The University of New South Wales

### **Project Summary**

The techniques to be developed will greatly improve the reliability of diesel engines, many of which are used in the mining and transport industries, extremely important to Australia's economy, and often remotely located. Not only will unforeseen costly breakdowns be minimized, but also the cost of excessive maintenance operations. This Australian developed technology will gain prestige from association with the internationally recognised company LMS International, who supply test and simulation systems to most of the world's leading manufacturers of vehicles, aircraft etc.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883831** Dr DG Regan; Dr DJ Philp; Prof NG Becker; Prof A Smith; Prof AE Grulich; Dr EL Conway; A/Prof D Gertig; A/Prof MG Law; Dr J Hocking; Dr AN Stein; A/Prof M Saville; Prof J Kaldor

**Approved Project Title** **Planning female and male vaccination and cervical screening strategies to achieve optimal prevention of HPV-related disease**

**2008 :** \$ 102,352

**2009 :** \$ 168,602

**2010 :** \$ 153,119

**2011 :** \$ 86,869

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

CSL Limited

Victorian Cytology Service

**Administering Organisation** The University of New South Wales

**Project Summary**

The findings from this research will inform the development of public health policy on the most cost-effective utilisation of resources for preventing cervical, anogenital and head/neck cancers, and genital warts, in women and men, due to human papillomavirus (HPV). We will evaluate strategies for using emerging screening and vaccine technologies to prevent HPV-related disease, and assess potential adverse outcomes of vaccination. Men are currently not covered by routine vaccination or screening programs; this research will assess the benefit to men of vaccinating women only, and will consider the impact of vaccination and other interventions targeted towards men.

**LP0884035** Prof AV Savkin; Prof NH Lovell; Prof BG Celler; Dr PM Middleton

**Approved Project Title** **Development of a multivariate physiologic state space analysis framework for characterising functional properties of the cardiovascular system**

**2008 :** \$ 85,000

**2009 :** \$ 160,000

**2010 :** \$ 145,000

**2011 :** \$ 70,000

**Primary RFCD** 2301 MATHEMATICS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

MedCare Systems Pty. Ltd.

**Administering Organisation** The University of New South Wales

**Project Summary**

Pathologies of the cardiovascular system arising from heart diseases make a major contribution to morbidity and mortality in the Australian community. This project will provide new diagnostic modalities based on advanced noninvasive bioinstrumentation, signal processing and model-based analytical methods to identify early signs of developing disease or the acute exacerbation of existing disease. The impact of these new technologies on the early diagnosis and improved triaging of patients in emergency departments is potentially profound and could result in improved healthcare outcomes for the patients and reduced admissions to hospital as well as the development of a substantial international market.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883296** Dr A Sharma; Prof AJ Pitman; Dr NK Tuteja

**Approved Project Title** **Integrated assessment of climate change, climate input errors and land-use change on soil-moisture and carbon-balance in a catchment simulation framework**

**2008 :** \$ 35,000  
**2009 :** \$ 65,000  
**2010 :** \$ 66,000  
**2011 :** \$ 66,000  
**2012 :** \$ 30,000

**Primary RFCD** 2605 HYDROLOGY

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

New South Wales Department of Environment and Climate Change (DECC)  
Southern Rivers Catchment Management Authority (SRCMA)

**Administering Organisation** The University of New South Wales

### Project Summary

Assessing soil moisture and carbon balance changes in a warmer climate is important for land-use and agricultural planning. A decision support tool is proposed that performs the assessment and allows us to develop plans that reduce adverse impacts. The tool consists of three parts. The first part models changes in rainfall accuracy to calibrate approaches for catchment simulation. The second part simulates rainfall under climate change conditions using stochastic downscaling. The third part simulates future soil moisture and carbon balance using downscaled climate inputs. The end result is a probabilistic simulation of the catchment hydrology under future climates.

**LP0883398** Prof M Sherris; Prof JR Piggott; A/Prof JR Evans; Dr C Kim; Dr EA Valdez; Prof OS Mitchell; Mr ES Hernaes

**Approved Project Title** **Managing Risk with Insurance and Superannuation as Individuals Age**

**2008 :** \$ 143,643  
**2009 :** \$ 307,822  
**2010 :** \$ 316,004  
**2011 :** \$ 337,151  
**2012 :** \$ 185,325

**Primary RFCD** 3402 APPLIED ECONOMICS

### Collaborating/Partner Organisation(s)

Australian Prudential Regulatory Authority  
PricewaterhouseCoopers Australia  
World Bank

**Administering Organisation** The University of New South Wales

### Project Summary

Financial stability lies at the heart of any market economy. The financial risks associated with uncertainty about longevity change comprise one of the most pressing challenges facing financial systems, nationally and globally. While insurance companies and superannuation funds hold significant reserves against future risks, the ageing of the population increases the number of people potentially exposed to loss in the event that insurers and pension funds cannot deliver on their obligations. With an increasing range of financial service products and markets developing to meet the needs of the aged, research into the issues of longevity risk and the financial impact of uncertainty in mortality and morbidity trends is vital.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883439** Prof R Simnett; Dr WJ Green  
**Approved Project Title** **Improving the Credibility of Greenhouse Gas Emissions Disclosures**  
**2008 :** \$ 37,980  
**2009 :** \$ 59,914  
**2010 :** \$ 45,998  
**2011 :** \$ 24,064  
**Primary RFCD** 3501 ACCOUNTING, AUDITING AND ACCOUNTABILITY

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

Institute of Chartered Accountants in Australia  
CPA Australia

**Administering Organisation** The University of New South Wales

### **Project Summary**

There is increasing demand for disclosures about greenhouse gas emissions around the world, and a desire to improve their credibility. This study will provide insights into the types of reporting and assurance that can be provided. In addition, it will examine the extent to which users are influenced by the greenhouse gas disclosures and assurance provided. As such, this research will provide an important knowledge base in determining the appropriate focus of future reporting and assurance in this area. It is expected that this research will inform the development of an international and Australian assurance standard on greenhouse gas emissions.

**LP0883561** Prof TD Waite; Dr SJ Khan; Dr B Vigneswaran  
**Approved Project Title** **Physico-chemical Controls on Growth, Toxicity and Succession of Microcystis and Anabaena Species in Sydney Water Supply Reservoirs**  
**2008 :** \$ 30,000  
**2009 :** \$ 60,000  
**2010 :** \$ 60,000  
**2011 :** \$ 30,000  
**Primary RFCD** 2599 OTHER CHEMICAL SCIENCES

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

Sydney Catchment Authority

**Administering Organisation** The University of New South Wales

### **Project Summary**

Insight into the forms of nutrients that are most readily assimilated by Microcystis and Anabaena species prevalent in Lake Burragorang and other Sydney water supply reservoirs will assist in determining the key drivers to occurrence of blooms of these organisms, particularly when combined with an understanding of the spatial and temporal distribution of the forms of nutrients, the dynamics of transformation between these various forms and the key parameters of light and temperature. In addition, the particular forms in which nutrients are acquired may influence the extent of toxin production. Thus, the findings of the project will also assist in elucidating the conditions under which toxin generation is expected.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883512** Prof AB Yu; Dr P Zulli; Dr PR Austin; Dr SJ Chew

**Approved Project Title** **Multiscale modelling of the transport phenomena of liquid iron and slag in ironmaking blast furnace**

**2008 :** \$ 125,832

**2009 :** \$ 255,776

**2010 :** \$ 267,374

**2011 :** \$ 275,341

**2012 :** \$ 137,911

**Primary RFCD** 2913 METALLURGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

BlueScope Steel Research Labs

**Administering Organisation** The University of New South Wales

**Project Summary**

Blast furnace ironmaking is a key operation in the steel industry which, with an annual turnover around \$11 billion, is a significant manufacturing sector in Australia. This project, focused on the behaviour of liquid iron and slag, can generate computer models that can reliably describe the complicated multiphase flow and thermochemical processes in the furnace. The implementation of the resultant models and the new understanding should lead to long life campaigns, better operational control, decreased fuel consumption, improved productivity and reduced environmental impact. This, together with the proposed research training, is important to the development of Australia's competitive steel industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### The University of Newcastle

**LP0884139** Dr SW Donne; Dr P Aitchison; Dr WD King

**Approved Project Title** **Capacitance Fade Mechanisms in Carbon-Based Supercapacitors**

**2008 :** \$ 12,813  
**2009 :** \$ 25,627  
**2010 :** \$ 25,627  
**2011 :** \$ 12,813

**Primary RFCD** 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

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

CAP-XX (Australia) Pty Ltd

**Administering Organisation** The University of Newcastle

#### **Project Summary**

Energy storage is of significant importance to the global community. This project addresses certain performance issues concerning prolonged energy storage in supercapacitors, which are an emerging technology in the electronics industry. CAP-XX is Australia's only manufacturer of supercapacitors, and the improvements to their products that will result from this work, will lead to significant returns to them and the Australian economy.

**LP0884147** Dr K Krabbenhoft; Prof SW Sloan; Mr PL Shrestha; A/Prof AV Lyamin; Dr AS Jones; Mr D Castillo; Dr JS Truelove

**Approved Project Title** **Microstructural Analysis and Modelling of Copper Ore Agglomerates for Heap Leaching**

**2008 :** \$ 65,000  
**2009 :** \$ 130,000  
**2010 :** \$ 130,000  
**2011 :** \$ 65,000

**Primary RFCD** 2907 RESOURCES ENGINEERING

APA(I) Award(s): 1

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

BHP Billiton Innovation Pty. Ltd.

**Administering Organisation** The University of Newcastle

#### **Project Summary**

The efficient extraction of valuable metals from mined ore can be considered as a problem of global concern as the world's reserves of such metals quickly diminish. For low grade copper ore, heap leaching has long been recognized as the most efficient mineral recovery procedure. This project aims to apply X-ray microtomography and micromechanical modelling to quantify the critical leaching properties of ore agglomerates and to formulate optimal heap leaching strategies. This will allow for better utilization of the Australia's low grade ore reserves. The procedures and methodologies to be developed will be applicable to other types of ore including gold, uranium and nickel.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883918** Dr GR MacFarlane; A/Prof RH Dunstan; Dr WA O'Connor; Dr L Van Zwieten

**Approved Project Title** **Molluscan Biomonitor for Quantification and Impact Assessment of Endocrine Disrupting Chemicals in Marine Ecosystems**

**2008 :** \$ 22,500  
**2009 :** \$ 45,000  
**2010 :** \$ 45,000  
**2011 :** \$ 22,500

**Primary RFCD** 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
NSW Dept Primary Industries  
Hunter Water Corporation  
Port Stephens Council

**Administering Organisation** The University of Newcastle

### Project Summary

There is an urgent need to address the significant issue of contaminants with potential endocrine disrupting effects in Australian waters. Robust monitoring tools are required to establish whether estrogens are present in sewage effluents/waters in Australia and the potential impacts on aquatic ecosystems. Edible oysters are one of Australia's most valuable and fastest growing aquaculture industries. The proposed project will provide management bodies within Australian estuaries a sound scientific basis to make informed decisions to facilitate protection of both aquatic biodiversity and commercial aquaculture initiatives in response to estrogenic diffuse and point inputs.

**LP0884106** Em/Prof AW Roberts; Dr CA Wheeler; Prof MG Jones; Mr LK Nordell; Dr R Steven

**Approved Project Title** **Development of a New Generation Low Rolling Resistance Conveyor Belt**

**2008 :** \$ 107,500  
**2009 :** \$ 207,500  
**2010 :** \$ 159,000  
**2011 :** \$ 59,000

**Primary RFCD** 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**  
Conveyor Dynamics, Inc.  
Veyance Belting Pty Ltd  
Laing O'Rourke Australia Construction Pty Ltd

**Administering Organisation** The University of Newcastle

### Project Summary

Belt conveying systems are employed extensively to transport bulk materials within Australia's mining and mineral processing industries. The energy consumption of belt conveyors are significant and dominated by the indentation rolling resistance of the idler rolls into the bottom cover of the belt. This project will develop technology to design more energy efficient conveyors by employing new laminated low energy loss belt covers. With Australian mineral exports exceeding \$100 billion, coupled with the considerable transportation distances often necessary in Australian mining operations, the outcomes of this research will result in significant energy savings and economic benefits to these vital industries.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883378** Dr MJ Veysey; Dr PR Lewis; Dr MD Lucock; Dr PD Roach; A/Prof DJ Kennedy

**Approved Project Title** **Is retirement village living good for health: Comparing the health of older adults living in retirement villages and the community**

**2008 :** \$ 62,337  
**2009 :** \$ 136,998  
**2010 :** \$ 132,749  
**2011 :** \$ 58,088

**Primary RFCD** 3701 SOCIOLOGY

### Collaborating/Partner Organisation(s)

Public Health Unit, Northern Sydney Central Coast Health  
UnitingCare Ageing NSW.ACT  
Babcock & Brown Communities Group  
Urbis Pty Ltd

**Administering Organisation** The University of Newcastle

### Project Summary

Australia's ageing population will have substantial economic and social ramifications. This study will contribute knowledge to the development and application of environmental and housing policies designed to promote health and public health and clinical interventions intended to combat the major contributors to disease and disability in older populations. Knowledge of factors that improve health and promote mobility, independence, social interaction and life satisfaction will also assist planning future age-congregated living environments. The research falls within national priority goals including ageing well, ageing productively, preventative healthcare, and strengthening Australia's social and economic fabric.

**LP0883716** Prof TF Wall; Dr PR Austin; Dr D Maldonado; Dr HP Rogers

**Approved Project Title** **Understanding the reactivity of pulverised coal at extreme conditions when injected into blast furnaces during PCI**

**2008 :** \$ 22,500  
**2009 :** \$ 45,000  
**2010 :** \$ 45,000  
**2011 :** \$ 22,500

**Primary RFCD** 2999 OTHER ENGINEERING AND TECHNOLOGY

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

BlueScope Steel Limited

**Administering Organisation** The University of Newcastle

### Project Summary

This study aims to improve the understanding and develop a mathematical model of coal combustion during injection into blast furnaces as PCI (pulverised coal injection). The principle economic and social benefits of this project to the community are: (i) Increased efficiency of Blast Furnace operations, resulting in cheaper production of iron in an increasingly globally competitive industry, supporting the Australian steel industry and domestic market. And (ii) the potential to impact on process fuel efficiency and reduce CO2 emissions from fossil fuel sources providing a cleaner source of iron for steel production.

**The University of Sydney**

**LP0884126** Prof R Booy; Dr J Leask; A/Prof TP Sloots; Dr SB Lambert

**Approved Project Title** **Social, Economic, and Health Benefits of Vaccinating Children in Day Care Centres against Influenza**

**2008 :** \$ 99,310  
**2009 :** \$ 193,221  
**2010 :** \$ 197,823  
**2011 :** \$ 103,911

**Primary RFCD** 3701 SOCIOLOGY

**Collaborating/Partner Organisation(s)**

KU Children's Services  
 Sanofi Pasteur

**Administering Organisation** The University of Sydney

**Project Summary**

Young children are frequently hospitalised for influenza. Infected children are also highly likely to transmit to child and adult contacts resulting in additional hospitalisations, and medical visits constituting a major societal and economic burden. Other social impacts include parental and day care staff work absence, and grandparental illness. Using a highly scientific approach to vaccinating children against influenza in preschool settings, we will determine the social and economic benefits to families and industry: employers of parents, and importantly the growing child-care industry.

**LP0883969** Prof H Chan; Prof NR Foster

**Approved Project Title** **The Scale-up and Evaluation of a Novel Dense Gas Technology Platform for the Production of Particles for Aerosol Drug Delivery.**

**2008 :** \$ 35,000  
**2009 :** \$ 70,000  
**2010 :** \$ 70,000  
**2011 :** \$ 35,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

**Collaborating/Partner Organisation(s)**

NanoMaterials Technology

**Administering Organisation** The University of Sydney

**Project Summary**

This project provides a unique opportunity to develop an Australian-invented technology in particle engineering, enabling it to enter the international pharmaceutical market. This will enhance the growth of Australia's pharmaceutical research and development, and benefit the Australian pharmaceutical industry. The outcome will also contribute to improvements in the health and well-being of Australians. The research falls within the Designated National Research Priority of Frontier Technologies for Building and Transforming Australian Industries.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883693** Dr RJ Diefenbach; Dr M Miranda Saksena; Prof AL Cunningham

**Approved Project Title** **Biological probes for understanding mammalian cellular transport mechanisms**

**2008 :** \$ 39,068

**2009 :** \$ 78,137

**2010 :** \$ 78,137

**2011 :** \$ 39,068

**Primary RFCD** 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Molecmo NanoBiotechnologies Inc.

**Administering Organisation** The University of Sydney

### Project Summary

Cellular components are moved around within cells by molecular motors. This fundamental transport mechanism depends on a network of tracks. Blocks in this cellular transport can result in a number of mammalian diseases, particularly within nerve cells. This project will increase our understanding of the mechanisms of cellular transport and, in particular, how molecular motors engage their cargo. This is essential groundwork for the development of drugs that target this transport mechanism.

**LP0883632** A/Prof I Kerridge; Dr CF Jordens; Mr KA Smith; Prof D Bennett; Dr P Patterson

**Approved Project Title** **Growing up with Cancer: A mixed method examination of how cancer influences the transition from adolescence to adulthood**

**2008 :** \$ 64,775

**2009 :** \$ 116,452

**2010 :** \$ 98,185

**2011 :** \$ 46,508

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

CanTeen

**Administering Organisation** The University of Sydney

### Project Summary

In the last decade, over 10,000 of Australia's adolescents and young adults were diagnosed with cancer. Over the last 30 years, improvements in survival for 15 - 30 year olds have been the lowest of all age groups. Despite this, few health care facilities have the specialised infrastructure needed for dedicated psychosocial support of adolescents.

In finding out from adolescents with cancer what is most important in their care, we aim to identify and develop a range of services dedicated not only to addressing some of their needs, but also to building upon aspects of the cancer experience thought by adolescents as having a positive impact on their lives.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884127** Dr RI Pedlow; Prof AR Downing; Prof HL Kendig; Mr RE Garrett; Dr LT Walker

**Approved Project Title** **Access to mobile communications for older people with impairments**

**2008 :** \$ 15,000

**2009 :** \$ 30,000

**2010 :** \$ 30,000

**2011 :** \$ 15,000

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

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

Novita Children's Services Inc

**Administering Organisation** The University of Sydney

### **Project Summary**

This research will determine the potential to use mobile communications to enable older people with impairments to remain active members of the community. it will test the capacity for mobiles to enable:

\* older people with impairments to maintain social communication links and summon assistance; and

\* caregivers to maintain contact with the older person during the day.

Providing these capabilities has the potential to improve the wellbeing and confidence of older people with impairments and their caregivers and to reduce negative outcomes due to falls or other medical problems by enabling older people to summon assistance easily.

**LP0884156** Prof KJ Rasmussen

**Approved Project Title** **High-strength formwork systems**

**2008 :** \$ 37,500

**2009 :** \$ 75,000

**2010 :** \$ 75,000

**2011 :** \$ 37,500

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

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

Boral Formwork and Scaffolding Pty Ltd

**Administering Organisation** The University of Sydney

### **Project Summary**

The project will lead to new formwork systems which are safer, stronger and quicker to erect. The systems will rely on scientific investigations to minimise the risk of structural collapse and associated cost to community. The systems are innovative and combine advanced technology to produce a superior product with strong export potential and capacity to raise the level of efficiency in the national market. The project will also develop advanced analysis and design methods for formwork systems which can be applied more generally to advance Australian engineers' position as world leaders in innovative structural design.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883915** A/Prof RM Smith; Dr AE Hunt; Dr BM Vanwanseele; Dr DM O'Meara

**Approved Project Title** **Foot-down not ground-up: moving from splint to natural models for children's shoe design**

**2008 :** \$ 44,000

**2009 :** \$ 88,000

**2010 :** \$ 88,000

**2011 :** \$ 44,000

**Primary RFCD** 3214 HUMAN MOVEMENT AND SPORTS SCIENCE

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

Bata Shoe Company of Australia

**Administering Organisation** The University of Sydney

### **Project Summary**

We will provide much-needed knowledge of the impact of children's footwear on their musculoskeletal development, by conducting rigorous experimental comparisons of a standard school shoe, a custom-built 'midfoot flexing' shoe, bare feet, and a new school shoe design concept developed by university researchers to enhance rather than disrupt natural foot function. The innovation will make Bata Australia the first manufacturer to embrace evidence-based shoe design, and will be an opportunity for the Company to provide global leadership in the field. Our advances will inform health professionals, manufacturers and parents in the task of improving the musculoskeletal health of young Australians.

**LP0883419** Dr MH Todd; Dr PL Olliaro

**Approved Project Title** **Praziquantel: a unique pharmaceutical challenge**

**2008 :** \$ 52,500

**2009 :** \$ 105,000

**2010 :** \$ 105,000

**2011 :** \$ 52,500

**Primary RFCD** 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 1

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

World Health Organisation

**Administering Organisation** The University of Sydney

### **Project Summary**

Generating effective and affordable drugs for the treatment of tropical diseases is a huge public health challenge. We will pioneer an open source approach to collaborative research in drug discovery. We aim to discover an inexpensive route to an important pharmaceutical so that it can be greatly improved and distributed to the affected populations for a realistic price. Success in this project will improve the lives of millions of sufferers of this disease, and demonstrate a new way of doing research on drugs for related diseases such as malaria.

**LP0883981** Prof AH Vickers; Em/Prof PJ Worsley; Dr L Christidis; Dr PE Monaghan

**Approved Project Title** **Understanding Balinese paintings: collections, narrative, aesthetics and society**

**2008 :** \$ 38,940

**2009 :** \$ 78,330

**2010 :** \$ 74,929

**2011 :** \$ 35,539

**Primary RFCD** 4199 OTHER ARTS

APA(I) Award(s): 1

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

The Australian Museum

The Batuan Collection

**Administering Organisation** The University of Sydney

### **Project Summary**

This project will use digital tools, fieldwork and formal analysis to link a major collection of Balinese paintings held in Australia to collections elsewhere in the world, and to the current practices of Balinese artists. The project increases the capacity of Australia to analyse the cultures of Indonesia and to contribute to regional heritage preservation. The outcomes will provide a basis for future public exhibitions of paintings and web-based resources linking Australian public institutions and Balinese communities.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883621** A/Prof LM Williams; Prof PR Schofield; Prof C Clark; Dr AH Kemp; Dr JM Gatt

**Approved Project Title** **Gene-brain pathways in emotional brain stability and instability**

**2008 :** \$ 125,000

**2009 :** \$ 235,000

**2010 :** \$ 210,000

**2011 :** \$ 100,000

**Primary RFCD** 3801 PSYCHOLOGY

APDI Dr JM Gatt

**Collaborating/Partner Organisation(s)**

Brain Resource Company

**Administering Organisation** The University of Sydney

### Project Summary

Emotional instability is a defining trait of major mental illnesses. The ability to identify individuals susceptible to emotional instability will be important in limiting the burden of disease from these illnesses. Mental conditions cost the Australian economy approximately \$14.9 bill p/a, and depression will be the second leading contributor to burden of disease by 2020. The project will provide the first evidence for the combination of gene-brain-behaviour markers which best capture emotional instability versus resilience. This evidence base will be crucial to developing new tools and strategies for early intervention, and ultimately prevention, for these conditions of mental health.

**LP0884070** Prof AY Zomaya

**Approved Project Title** **Data and Job Scheduling in Large-Scale Distributed Systems**

**2008 :** \$ 75,298

**2009 :** \$ 151,385

**2010 :** \$ 146,286

**2011 :** \$ 70,200

**Primary RFCD** 2804 COMPUTATION THEORY AND MATHEMATICS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Microsoft Pty Ltd

**Administering Organisation** The University of Sydney

### Project Summary

Distributed computing systems are the platform of choice for many applications. In these systems, applications are submitted by a large number of users that compete for the shared heterogeneous resources (computers, storage communication links, etc.). Thus, a distributed system can be viewed as a collection of computing and communication resources shared by active users. Towards this end, a new generation of algorithms and software tools need to be developed for the efficient utilisation of these systems through an appropriate allocation of the available resources to competing applications and users. This project is a major step in this direction.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### University of Technology, Sydney

**LP0883580** Prof JK Debenham; Prof SJ Simoff; Adj/Prof JR Leaney; Mr NB Sheridan-Smith; Mr MA Hunter; Mr V Pizzica; Dr DG Verchere

**Approved Project Title** **Smart communications network management: Delivering bundled interdependent services across internetworked heterogeneous domains.**

**2008 :** \$ 55,000

**2009 :** \$ 100,000

**2010 :** \$ 85,000

**2011 :** \$ 40,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 3

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

Alcatel-Lucent (Australasia) Pty Ltd

**Administering Organisation** University of Technology, Sydney

#### **Project Summary**

Sophisticated communications network management (data, voice, video) is crucial to the global economy. The field is worth several billion dollars per annum. This project will generate expertise that addresses and solves an important problem in communications management, will enable Australia to use communications networks more effectively, and will advance communications technology.

**LP0884112** Prof G Dissanayake; Dr S Kodagoda; Dr S Huang

**Approved Project Title** **Precision three-dimensional localization system for underground mining vehicles, offering improved productivity and personnel safety**

**2008 :** \$ 60,000

**2009 :** \$ 115,000

**2010 :** \$ 105,000

**2011 :** \$ 50,000

**Primary RFCD** 2903 MANUFACTURING ENGINEERING

APA(I) Award(s): 2

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

Pempek Systems Pty Ltd

**Administering Organisation** University of Technology, Sydney

#### **Project Summary**

The advanced machine guidance and monitoring technology developed by this project will significantly enhance the partner organisation's capacity as a leading supplier of mining machine control systems. The deployment of such enhanced machine control systems will offer an immediate national benefit to the Australian Mining Industry by dramatically improving productivity and occupational safety. The national interest will also be served by this project's significant contribution to Australia's leadership position as an innovator in frontier technologies for mining and robotics. Furthermore, the research outcomes will help to solve similar positioning problems in hazardous, GPS-denied environments such as urban search and rescue.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883485** Prof S Vigneswaran; Dr JK Kandasamy; Dr HK Shon; Mr A Chanan; Dr T Cummings; Prof RM Ben Aim

**Approved Project Title** **Cost effective treatment system for stormwater harvesting for medium scale developments**

**2008 :** \$ 30,000

**2009 :** \$ 60,000

**2010 :** \$ 60,000

**2011 :** \$ 30,000

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

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

Kogarah Council

Enersave Australia Pty Ltd

**Administering Organisation** University of Technology, Sydney

### **Project Summary**

Stormwater harvesting is central to the integrated water cycle management approach now being formally endorsed by all tiers of governments as the best way to manage our water resources. Despite its immense potential, stormwater harvesting in urban centres throughout Australia is largely limited to household rainwater tanks. By developing economical and efficient treatment systems suitable for medium density developments, this project will maximise the resource value of stormwater, and reduce demand on water supply systems. The project will lead to the development of medium sized communities within larger urban centres that maximises its use of stormwater for water needs.

**LP0884159** Prof KJ Waldron; Dr D Liu

**Approved Project Title** **Use of CT Scanned Data in automation of Carcass Processing**

**2008 :** \$ 25,627

**2009 :** \$ 51,254

**2010 :** \$ 51,254

**2011 :** \$ 25,627

**Primary RFCD** 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES

APA(I) Award(s): 2

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

Machinery Automation & Robotics

**Administering Organisation** University of Technology, Sydney

### **Project Summary**

Meat production is important to the Australian economy. The industry is threatened by inability to obtain sufficient labor for meat processing. Automation represents a potential solution, but brings challenges. Piecemeal automation has produced haphazard interspersing of automated and manual workstations. In meat processing automation, the greatest benefits are obtained when the process is integrated and data is passed down the process line. The outcomes of this project, a practically deployable robotic system, enabling methodologies and a common database, represent a big step towards integrated meat processing and bring enormous economic and health benefits to Australian community.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### University of Western Sydney

**LP0883344** Prof JM Ussher; Dr J Perz; Dr E Gilbert; Ms GM Batt; Dr KJ Sundquist; Mr GV Wain; Dr LT Kirsten; Ms K Hobbs

**Approved Project Title** **Multiple perspectives on sexuality and intimacy post-cancer, leading to the development and evaluation of supportive interventions**

**2008 :** \$ 65,792

**2009 :** \$ 147,997

**2010 :** \$ 136,862

**2011 :** \$ 54,657

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 2

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

National Breast Cancer Foundation

Cancer Council NSW

Westmead Hospital

Sydney West Cancer Network Psycho-oncology Service

**Administering Organisation** University of Western Sydney

#### **Project Summary**

In 2006, over 106,000 new cases of cancer were diagnosed in Australia, impacting on the quality of life of patients and their partners. A significant proportion of couples report cessation of sexual and intimate contact post-cancer, resulting in considerable distress. To date, there has been no examination of this important health concern across a broad range of cancer types, from the perspective of patients and their partners. Equally, support services rarely address sexuality issues post-cancer. This project will benefit people with cancer and their partners through examining pathways to distress, and developing programs to facilitate re-negotiation of sexuality and intimacy, post-cancer.

**LP0884006** Dr MW Wiggins; Dr HG MacDougall; A/Prof DP O'Hare; Mr NP Smith

**Approved Project Title** **Cue Acquisition as a Mediator of Cognitive Skills Development**

**2008 :** \$ 22,500

**2009 :** \$ 70,000

**2010 :** \$ 87,500

**2011 :** \$ 40,000

**Primary RFCD** 3801 PSYCHOLOGY

APA(I) Award(s): 1

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

TransGrid

**Administering Organisation** University of Western Sydney

#### **Project Summary**

As the Australian workforce ages and there is a consequent reduction in the availability of experienced practitioners, organisations are going to be faced with the dilemma of placing relatively inexperienced staff in positions that were once occupied by experts. The result is a potential increase in the risks to critical infrastructure, such as electricity transmission. In this project, we expect to develop a set of principles that can ensure that scenario based training is targeted to those aspects of the situation that are most important in maintaining the integrity of the system. The outcome is not only a safer system, but one that provides a structured approach to the acquisition of skills amongst employees.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883646** Prof Y Zhang; Dr D Zhang; Dr W Wang

**Approved Project Title** **Developing Sophisticated e-Business Automation**

**2008 :** \$ 24,963

**2009 :** \$ 47,430

**2010 :** \$ 35,280

**2011 :** \$ 12,813

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Smartlink Solutions Pty Limited

**Administering Organisation** University of Western Sydney

**Project Summary**

This project will provide theoretical foundations and a practical platform for developing advanced e-business automation technology. As such, it will significantly enhance Australia's leading role in the cutting edge research on e-business automation. By applying the new methodology and technology, Australian IT industries will be able to develop highly efficient e-market application systems, which will be financially beneficial to most organizations as Australia business and institutions are moving towards a more electronically oriented future. With a strong research team and collaborative research training environment, this project will further promote Australia's international reputation as a leader in Computing and IT research.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### University of Wollongong

**LP0883244** Prof BN Indraratna; Dr C Rujikiatkamjorn; Mr HG Buys; Mr VC Wijeyakulasuriya; Dr R Kelly; Mr GW McIntosh; Prof S Leroueil; Dr J Chu

**Approved Project Title** **Advancement of Vacuum Pressure Application via Prefabricated Vertical Drains for Stabilising Soft Ground**

**2008 :** \$ 55,000

**2009 :** \$ 115,000

**2010 :** \$ 120,000

**2011 :** \$ 60,000

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

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

Roads and Traffic Authority

Queensland Department of Main Roads

Coffey Geotechnics

Douglas Partners Pty Ltd

**Administering Organisation** University of Wollongong

#### **Project Summary**

Coastal Australia is under ever increasing pressure from rapid population growth which requires continual capital investment in civil infrastructure, such as road and rail links and large buildings. Many regions have soft compressible clays that present challenges for infrastructure design and construction. The use of vacuum preloading, together with vertical drains for soft soil stabilisation, can reduce construction and maintenance costs, while the increased soil strength will enhance the stability of infrastructure. This project will deliver design guidelines and specifications of enhanced vacuum consolidation application, as well as improving industrial competitiveness and export earnings through increased technology transfer.

**LP0883330** Prof SC Jones; Prof D Iverson; Dr P Caputi; Dr AG Penman; Ms A Tang; Ms KR Coppa; Mrs JA Goldston

**Approved Project Title** **Implementation and evaluation of a comprehensive sun protection program for adolescents**

**2008 :** \$ 34,797

**2009 :** \$ 74,033

**2010 :** \$ 82,427

**2011 :** \$ 43,191

**Primary RFCD** 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

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

The Cancer Council NSW

**Administering Organisation** University of Wollongong

#### **Project Summary**

Australia has the highest incidence of skin cancer in the world, costing our health system an estimated \$300 million each year. The majority of skin cancers are preventable, if the public could be persuaded to adequately protect themselves from the sun, especially during childhood and adolescence. Australia currently leads the world in the development of sun protection education campaigns for children. However, adolescent sun protection behaviours continue to decrease, and very few programs have shown potential for any impact on this key target group. This project will provide much-needed evidence on the effectiveness of carefully researched and targeted programs for adolescents.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883729** Prof SC Jones; Prof SJ Allsop; Dr T Chikritzhs; Dr M Wakefield; Prof S- Casswell; Ms F Lander; Ms N La Touche

**Approved Project Title** **An investigation of the nature and effects of point-of-sale promotions for alcohol beverages**

**2008 :** \$ 48,289

**2009 :** \$ 89,147

**2010 :** \$ 63,830

**2011 :** \$ 22,972

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Office for Children and Youth

**Administering Organisation** University of Wollongong

### Project Summary

There is increasing evidence that alcohol consumption is influenced by alcohol advertising, pricing, and marketing activities. However, the current lack of clear evidence on the effect of different promotions (such as reduced-price drinks, competitions etc) means that the current guidelines are unclear and unenforceable. This project will provide clear guidance for policy makers on the effects of the different forms of alcohol promotions, allowing for better monitoring and regulation of alcohol marketing. The key benefit of this project lies in the potential to develop a clear strategy to reduce alcohol-related harm by addressing inappropriate marketing and promotion of alcohol.

**LP0884061** A/Prof PA Keller; Dr R Griffith; Dr DI Rhodes; Dr JA Coates

**Approved Project Title** **The Design and Development of the Next Generation Anti-HIV Drugs**

**2008 :** \$ 32,500

**2009 :** \$ 62,500

**2010 :** \$ 65,000

**2011 :** \$ 35,000

**Primary RFCD** 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Avexa

**Administering Organisation** University of Wollongong

### Project Summary

This medicinal chemistry project will develop new computer-aided modelling techniques for drug design and development and will then apply them to the design of new therapeutics for the treatment of HIV-1/AIDS. Once developed, these new techniques can also be applied to other disease targets including various cancers, where specific proteins have been identified as causative. This research will also contribute to the education of young scientists, training them in cutting-edge research skills.

**LP0884075** Prof A Lawson; Prof PW Eklund; Dr BS Bunt; Dr L Christidis; Mr V Daniel

**Approved Project Title** **The application of concept lattices to digital museum collection management and access**

**2008 :** \$ 45,703

**2009 :** \$ 87,819

**2010 :** \$ 77,416

**2011 :** \$ 35,300

**Primary RFCD** 4003 CURATORIAL STUDIES

**Collaborating/Partner Organisation(s)**

The Australian Museum

**Administering Organisation** University of Wollongong

### Project Summary

The project provides Australia access to, and champions for, leading-edge, content-based multimedia management and retrieval. For the past two decades, Australia has been a world leader in museum management, particularly in the areas of collection access and digitisation. This project will assist one of the nation's most significant museums to maintain a competitive edge nationally and internationally through new approaches to annotating, searching and navigating digital collections. Trialled in this major institution, the project outcomes have great potential for dissemination and application throughout the collections sector.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883817** Dr BJ Monaghan; Prof AB Yu; Dr P Zulli; Dr SJ Chew; Dr PR Austin  
**Approved Project Title** **The Fundamentals of Liquid Flow Through A Reactive Packed Bed**  
**2008 :** \$ 12,813  
**2009 :** \$ 25,627  
**2010 :** \$ 25,627  
**2011 :** \$ 12,813  
**Primary RFCD** 2913 METALLURGY  
APA(I) Award(s): 1

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

BlueScope Steel Limited

**Administering Organisation** University of Wollongong

### **Project Summary**

A new and improved understanding of reactions that occur between liquids and coke in the lower zone of the blast furnace will enable ironmaking process optimization, and result in a significant reduction in carbon usage. This will decrease the amount of greenhouse gas emissions. The results will benefit metal refiners and associated support industries that utilize coal or coke in their process. Process optimization also helps to ensure that Australia's vitally important steel industry remains internationally competitive, able to provide both quality steel for domestic and export markets and employment for thousands of Australians.

**LP0883546** Prof E Pereloma; Dr A Calka; Prof DP Dunne; Dr FJ Barbaro  
**Approved Project Title** **Advanced Testing and Structural Analysis for Assessment and Control of Hydrogen Damage in Structural Steels**  
**2008 :** \$ 80,000  
**2009 :** \$ 180,000  
**2010 :** \$ 160,000  
**2011 :** \$ 134,500  
**2012 :** \$ 74,500  
**Primary RFCD** 2913 METALLURGY  
APA(I) Award(s): 1

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

BlueScope Steel Limited

**Administering Organisation** University of Wollongong

### **Project Summary**

Hydrogen offers the potential for reducing emissions in transport and energy generation industries as it is a low emission energy carrier. However, there remain questions in relation to the effects of hydrogen gas on the structural integrity of large structural steel components, such as gas distribution pipelines. The project aims to provide guidance on the safe use of hydrogen in high pressure vessels manufactured from low alloy ferritic steels. This project will increase confidence in relevant safety codes and standards, consequently increasing the likelihood of large scale uptake of hydrogen energy technologies.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883711** Dr JF Wallman; Dr M Dowton; Dr MS Archer; Dr SL Cameron

**Approved Project Title** **Improving Insect-based Technology for Minimum Death Time Estimates in Forensic Investigations in Australia**

**2008 :** \$ 40,000

**2009 :** \$ 80,000

**2010 :** \$ 80,000

**2011 :** \$ 40,000

**Primary RFCD** 2705 ZOOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Forensic & Technical, Australian Federal Police

NSW Police (Forensic Services Group)

Victoria Police Forensic Science Centre

Victorian Institute of Forensic Medicine

Department of Forensic Medicine, Institute of Clinical Pathology and Medical Research

**Administering Organisation** University of Wollongong

**Project Summary**

This research will provide more accurate, narrower death time estimates for Australia. Focusing enquiries more accurately around the death time will result in significant financial savings in homicide investigations. Court evidence based on insects will become more robust, thus improving prosecution success. Partnerships will also be enhanced between laboratories with common aims, but different experience and expertise, thereby avoiding research duplication and producing synergistic effects of collaboration. Casework methodology in Australia will become better aligned, thus avoiding courtroom conflicts between practitioners. Finally, high quality graduate students will be trained in entomological and forensic sciences.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Victoria

#### Deakin University

**LP0883525** Dr CM Burns; Prof K Mavromaras; Prof A Scott; Ms LC Gold; Dr MA Lawrence

**Approved Project Title** **Obesity Prevention Among Low Income Families: Economic and Strategic Modelling**

**2008 :** \$ 23,356

**2009 :** \$ 47,538

**2010 :** \$ 48,816

**2011 :** \$ 24,634

**Primary RFCD** 3402 APPLIED ECONOMICS

#### Collaborating/Partner Organisation(s)

VicHealth

**Administering Organisation** Deakin University

#### Project Summary

This study will inform social and economic policies to improve the access and consumption of healthy foods in low income families. This will help prevent and treat obesity in these vulnerable groups.

**LP0883843** Prof J Graffam; Prof RA Cummins; Dr EM Wilson; Dr JA McGillivray; Mr M Bink; Dr N Hagiliassis

**Approved Project Title** **The 1-in-4 Poll: Inclusion of people with a disability and carers in social and political deliberative processes.**

**2008 :** \$ 32,566

**2009 :** \$ 65,197

**2010 :** \$ 68,298

**2011 :** \$ 35,666

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

#### Collaborating/Partner Organisation(s)

Scope (Vic)

**Administering Organisation** Deakin University

#### Project Summary

This proposed project will benefit Australia by developing a method that includes ongoing quarterly topical surveys through which people with a disability and their carers, approximately one in four Australians, can effectively participate in social and political processes. It will also test the efficacy of 'influencing activities' that derive from those surveys. Additionally, the project will establish a data set that will provide regular and reliable information from and about people with a disability in Australia. This is a unique and much needed contribution to social justice within Australia.

**LP0883399** Prof PD Hodgson; Dr BF Rolfe; Dr C Yang

**Approved Project Title** **Design Strategy for Cold Roll Formed Products**

**2008 :** \$ 37,500

**2009 :** \$ 75,000

**2010 :** \$ 75,000

**2011 :** \$ 37,500

**Primary RFCD** 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

#### Collaborating/Partner Organisation(s)

Australian Rollforming Manufacturers (ARM)

DataM Software GmbH

Applied Research & Development (ARD)

**Administering Organisation** Deakin University

#### Project Summary

Roll forming is a widely used metal forming technology in Australia. The demands for shorter lead times, more complex shapes, new high strength materials and more demanding markets such as the automotive industry, requires increased virtual engineering at the design stage. This project will develop the models and tools required to enable the industry to efficiently design robust roll configurations to meet current and future demands. The outcomes from this project will not only benefit the industry partners involved but the general Australian roll forming industry, opening up new markets and opportunities.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883666** Prof X Wang; Dr T Lin; Dr T Tsuzuki  
**Approved Project Title** **Value Adding to Australian Cashmere Fleece**  
**2008 :** \$ 46,750  
**2009 :** \$ 93,441  
**2010 :** \$ 95,572  
**2011 :** \$ 48,881  
**Primary RFCD** 2903 MANUFACTURING ENGINEERING

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

Cashmere Connections P/L

**Administering Organisation** Deakin University

### **Project Summary**

This project will lead to major technical advance in the processing of both cashmere fibres and cashmere guard hair. Reducing the level of breakage in fine cashmere fibres will add significant premium to the price of cashmere fibres and products. In addition, the large amount of coarse guard hair removed from cashmere dehairing process will be converted into quality fine powders, which will add significant value to an otherwise 'waste' product. This project will benefit the entire animal fibre industry, particularly the rare animal fibre industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### La Trobe University

**LP0883273** Dr AR Gendall; Prof RW Parish; Dr JG Mason

**Approved Project Title** **Enhancement of Novel Flower Colours**

**2008 :** \$ 15,000

**2009 :** \$ 30,000

**2010 :** \$ 30,000

**2011 :** \$ 15,000

**Primary RFCD** 3003 HORTICULTURE

APA(I) Award(s): 1

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

Florigene Pty Ltd

**Administering Organisation** La Trobe University

#### **Project Summary**

The demand for novel colours and varieties of cutflowers is the most important driver for the floriculture industry. This project will increase the understanding of the factors that regulate flower colour and produce flowers with novel colours. This novelty is a consumer trait, and is likely to translate into increased sales and revenue to the Industry Partner, with income from these worldwide sales translating directly into the employment of research and development staff in Australia. This project will maintain Australian expertise in the production of horticultural commodities and provide research training to a post-graduate student with industry experience.

**LP0883383** Dr BS Jorgensen; Prof JF Martin; Dr MW Pearce; A/Prof EM Willis

**Approved Project Title** **Interactions between Social, Economic and Regulatory Aspects of Residential Household**

**Water Consumption**

**2008 :** \$ 33,489

**2009 :** \$ 33,489

**Primary RFCD** 3701 SOCIOLOGY

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

Coliban Water

SA Water

**Administering Organisation** La Trobe University

#### **Project Summary**

Water security is at crisis point in many Australian regions and overseas. This research will engage citizens in water conservation and management, and will have a number of significant outcomes that will benefit national and community interests. These include (1) devising effective water management strategies that are acceptable to residential customers in two contrasting water service regions, (2) a generalisable and replicable model of residential household water consumption that highlights the issues of public trust in current water governance arrangements, and (3) recommendations for communication and behaviour change interventions that promote water-use efficiency and conservation, and are sensitive to regional differences.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883233** Dr AJ Taft; Dr RE Small; Prof CF Humphreys; A/Prof KL Hegarty; Prof J Lumley  
**Approved Project Title** **Improving maternal and child health care for women experiencing violence: collaborative development, implementation and effectiveness of a good practice model**  
**2008 :** \$ 59,129  
**2009 :** \$ 92,300  
**2010 :** \$ 70,117  
**2011 :** \$ 36,946  
**Primary RFCD** 3211 NURSING

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

Victorian Health Promotion Foundation (VicHealth)

Office of Women's Policy

Berry Street Family Services

Women's Health West

Office for Children

Hobsons Bay City Council

Melton Shire Council

Moreland City Council

Maribyrnong City Council

**Administering Organisation** La Trobe University

### **Project Summary**

Maternal and child health services are universal community-based national services for Australia's mothers and babies. However, they are poorly researched, supported, resourced and lack evidence for managing the challenges of addressing intimate partner violence among their client populations. Partner violence is prevalent in early parenthood and imposes a heavy health burden on victims and infants and a significant cost to society. If effective, this innovative model of maternal child health nursing care for abused mothers and infants will inform the enhanced provision of early intervention services nationwide, contribute to community nursing scholarship and give children a healthier start to life.

**LP0883996** A/Prof RS Weisinger; Prof AJ Sinclair; A/Prof D Cameron-Smith; Dr M Jois

**Approved Project Title** **Dietary sugarcane-derived polyphenols reduce obesity**

**2008 :** \$ 22,961

**2009 :** \$ 52,961

**2010 :** \$ 60,000

**2011 :** \$ 30,000

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

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

Horizon Science Pty Ltd

**Administering Organisation** La Trobe University

### **Project Summary**

The Australian Sugar Industry is a billion dollar industry with refined sugar being calorie-rich but nutrition poor. Consumption of refined sugar is a main contributor to the increasing problem of obesity and metabolic syndrome, costing the Australian health system billions of dollars annually. The principal outcomes of this project will be to show that the polyphenols contained in the waste products from sugar refining can be used to reduce body fat and insulin resistance. These outcomes have enormous implications for human health and disease, and for the sugar industry, thus providing a competitive edge in the world sugar market.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Monash University

**LP0883738** Prof DA Abramson; Dr L DeRose; Mr R Moench

**Approved Project Title** **A scalable debugging framework for petascale computers**

**2008 :** \$ 59,631  
**2009 :** \$ 116,762  
**2010 :** \$ 105,131  
**2011 :** \$ 48,000

**Primary RFCD** 2803 COMPUTER SOFTWARE

APA(I) Award(s): 1

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

Cray Inc

**Administering Organisation** Monash University

#### **Project Summary**

Supercomputing underpins a wide range of areas of importance to the Australian economy; mining, agriculture, engineering, medical research and pharmaceutical development to name a few. It is of critical importance that software solutions in these areas behave correctly and do not generate erroneous results. This project will develop software tools and techniques that make it possible to detect and locate errors as software is converted to run on the next generation of 'petascale' supercomputers. We will deploy the tools both commercially through our industry partner, and also on national high performance computing facilities.

**LP0883661** Prof RA Cas; Dr IH Campbell; Dr CV Spaggiari

**Approved Project Title** **Understanding the stratigraphic and structural architecture of late Archean basins and the context of their gold deposits**

**2008 :** \$ 40,000  
**2009 :** \$ 80,000  
**2010 :** \$ 95,000  
**2011 :** \$ 55,000

**Primary RFCD** 2601 GEOLOGY

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

Gold Fields Limited

Geological Survey of Western Australia

**Administering Organisation** Monash University

#### **Project Summary**

Gold mined from Archean rocks contributed \$4.0 billion to Australia's export income in 2006 and provided the backbone of support for many remote communities. However, production has fallen 40% since 1997 and will be exhausted within 15 years unless major new discoveries are made. The potential to find additional gold deposits remains high, but urgently requires new data and improved exploration techniques to assist in their discovery. The results of this integrated multidisciplinary project will help to arrest the declining discovery rate and thereby sustain this important Australian industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883290** Dr FG Collins; Dr TC Molyneaux; Dr N Birbilis; Dr DW Law; Dr F Blin; Dr M Berndt

**Approved Project Title** **Improved Management of Australian Port Infrastructure by Development of Predictive Ageing Simulation**

**2008 :** \$ 25,627  
**2009 :** \$ 51,254  
**2010 :** \$ 51,254  
**2011 :** \$ 25,627

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**  
Geelong Port  
Maunsell Australia P/L  
Sydney Ports

**Administering Organisation** Monash University

### Project Summary

Exposure of built infrastructure to corrosive marine conditions causes deterioration and reduced service life. Asset managers lack predictive models of in-service durability. Using data gathered from Australian ports, life-cycle predictions will be developed, simulating durability and incorporating geographical location, structure type, composition, and levels of maintenance. The modelling has not been undertaken on Australian port assets, whereas international models reflect very different infrastructure and exposures and are based on simpler 2D conditions that do not simulate actual deterioration. The three-dimensional (3D) modelling and graphics will be unique worldwide, providing decision support for construction and maintenance.

**LP0884010** Prof JM Godfrey; Prof KT Trotman; A/Prof KG Chalmers; Dr R Moroney; Dr B Potter

**Approved Project Title** **Managing the world's most precious resource: The role of water accounting**

**2008 :** \$ 28,000  
**2009 :** \$ 67,500  
**2010 :** \$ 69,000  
**2011 :** \$ 29,500

**Primary RFCD** 3501 ACCOUNTING, AUDITING AND ACCOUNTABILITY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
CPA Australia  
The Institute of Chartered Accountants in Australia

**Administering Organisation** Monash University

### Project Summary

This project contributes to the National Research Priorities goal to develop sustainable ways of improving water productivity, using less water in agriculture and other industries, and providing increased protection of rivers and groundwater. Robust and rigorous water accounting and assurance will allow water managers to identify and address system water losses, and will underpin increased market and investment confidence in water information among water users. The collaborations between industry, academia, government and the accounting and water management professions will provide and demonstrate high profile, significant and timely international thought leadership in the emerging discipline of water accounting standards.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883961** Prof C Jakob; Prof AH Lynch; Dr LD Rotstayn; Dr R Colman

**Approved Project Title** **Assessing clouds and rainfall in Australia's community climate model - Towards an improved simulation of Australia's water resources**

**2008 :** \$ 32,500

**2009 :** \$ 65,000

**2010 :** \$ 64,000

**2011 :** \$ 65,000

**2012 :** \$ 33,500

**Primary RFCD** 2606 ATMOSPHERIC SCIENCES

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

Australian Greenhouse Office

**Administering Organisation** Monash University

### **Project Summary**

Climate change is likely to significantly affect Australia's water resources. A well-measured response to this challenge requires reliable projections of future climate using modern Earth System Models. By thoroughly evaluating Australia's community climate model this research will inform Australia's adaptation policy and through subsequent model development it will contribute to significant improvements in our ability to understand and predict climate change. Through better informing water resource management the research constitutes an important contribution to an environmentally sustainable Australia.

**LP0883815** Prof EN Meeusen

**Approved Project Title** **Characterisation and development of adjuvants for new generation veterinary and human vaccines**

**2008 :** \$ 45,000

**2009 :** \$ 100,000

**2010 :** \$ 110,000

**2011 :** \$ 55,000

**Primary RFCD** 3202 IMMUNOLOGY

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

Pfizer Australia

**Administering Organisation** Monash University

### **Project Summary**

Vaccination is the most successful and cost-effective means of combating infectious diseases in both veterinary and human medicine. This project will increase our understanding of how vaccines work and will help the development of new vaccines against infections in both animals and man. The results of these studies will also increase the competitiveness of Australian scientists in the field of vaccine research and development.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883295** Dr BG Naylor; Prof A Freiberg; Dr JF Debeljak; Dr I Dussuyer; Dr SD Thomas

**Approved Project Title** **Applying Human Rights Legislation In Closed Environments: A Strategic Framework For Managing Compliance**

**2008 :** \$ 16,179  
**2009 :** \$ 49,623  
**2010 :** \$ 78,222  
**2011 :** \$ 44,778

**Primary RFCD** 3903 JUSTICE AND LEGAL STUDIES

### Collaborating/Partner Organisation(s)

Ombudsman Victoria  
Victorian Equal Opportunity and Human Rights Commission  
Office of the Public Advocate  
Office of the Inspector of Custodial services  
Office of Police Integrity  
Commonwealth Ombudsman

**Administering Organisation** Monash University

### Project Summary

The project will be a principal source of knowledge about the application of human rights in secure settings in Australia. It will improve the delivery and quality of services to people held in closed environments, such as prisons, detention centres, and settings accommodating the aged and persons with disabilities. It will assist both human rights monitoring bodies, and staff and management of closed settings to implement human rights obligations in everyday operations, and will heighten awareness in the community of the rights of people in these settings.

**LP0883541** A/Prof P Perlmutter; Dr AW Purcell; A/Prof M Aguilar

**Approved Project Title** **New technology for the delivery of peptide-based T-cell vaccines for tumour immunotherapy**

**2008 :** \$ 200,000  
**2009 :** \$ 425,000  
**2010 :** \$ 225,000

**Primary RFCD** 3202 IMMUNOLOGY

### Collaborating/Partner Organisation(s)

Cancer Therapeutics Limited  
**Administering Organisation** Monash University

### Project Summary

This project is dedicated to finding simple methods for vaccinating humans and animals against a wide variety of cancers. Should this be achieved millions of Australians will be protected from the devastating consequences of cancer. Consequently there will be great benefits socially, medically and economically.

**LP0884059** Prof CW Pouton; A/Prof CJ Porter; Dr H Benameur; Dr K Hutchison

**Approved Project Title** **Mechanisms of enhancement of absorption of poorly water-soluble drugs from the gastrointestinal tract mediated by lipids, surfactants and polymers**

**2008 :** \$ 45,000  
**2009 :** \$ 95,000  
**2010 :** \$ 130,000  
**2011 :** \$ 80,000

**Primary RFCD** 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

Capsugel division of Pfizer  
**Administering Organisation** Monash University

### Project Summary

This project will provide technological advances with significant benefits in terms of improved drug treatment, and therefore health outcomes for Australia. The projects builds on internationally recognised research strengths at Monash University in lipid-based drug delivery, and connects Monash and Australia with applied research in the multinational pharmaceutical industry. This will enhance the standing of Australian biomedical research in the pharmaceutical world and directly facilitate a partnership between Monash and Capsugel in commercialisation of the outcomes of the project. The project will also train Australian scientists in skills that are in great demand in the developing pharmaceutical industry in Australia.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883705** Prof BC Scates; A/Prof MN Oppenheimer; Ms CI Yeats

**Approved Project Title** **A Land Fit for Heroes. A Social, Cultural and Environmental History of Soldier Settlement in New South Wales, 1916-1939.**

**2008 :** \$ 21,000

**2009 :** \$ 42,500

**2010 :** \$ 74,503

**2011 :** \$ 53,003

**Primary RFCD** 4301 HISTORICAL STUDIES

APA(I) Award(s): 1

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

Department of Veterans' Affairs  
State Records New South Wales

**Administering Organisation** Monash University

### **Project Summary**

The digger has an iconographic status in Australian society; thousands of families have charted the service records of relatives who served in the first AIF. This project will recover the returned soldier as important an historical entity as the men (and women) who went to war. It will look at ways our society tried to recover from the trauma of war, examine our veterans' return to Australia and their difficult readjustment to civil society. Soldier settlers faced a new battle in opening up the land. Like many in regional NSW today, they struggled against isolation, drought and financial hardship. This project will evaluate the role soldier settlement played in populating remote districts and assess its long-term environmental costs.

**LP0883452** Prof J Soria

**Approved Project Title** **The effect of turbulence scale and intensity on water flow measurement using ultrasonic techniques**

**2008 :** \$ 25,000

**2009 :** \$ 50,000

**2010 :** \$ 50,000

**2011 :** \$ 25,000

**Primary RFCD** 2918 INTERDISCIPLINARY ENGINEERING

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

Rubicon Systems Australia Pty Ltd

**Administering Organisation** Monash University

### **Project Summary**

Management of water resources and water distribution networks is important as Australia and the world face increasing water shortages. A significant aspect of water management is prevention of supply losses in urban and non-urban water distribution networks - a vital factor in improving water security of Australian cities and agricultural production regions. This research will develop ultrasonic flow-velocity technology, which can be retrofitted to existing water distribution networks, providing distributed high precision water flow measurement systems that can prevent the loss each year of more than 155GL of water through leaks and burst in Australia's capital cities alone.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883855** Prof MG Wallace; Prof GI Webb; A/Prof NL Boland; Mr IR Evans; Dr H Gu

**Approved Project Title** **Methods and software for efficiently solving the transportation crewing problem**

**2008 :** \$ 120,000  
**2009 :** \$ 220,000  
**2010 :** \$ 195,000  
**2011 :** \$ 200,000  
**2012 :** \$ 105,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 3

**Collaborating/Partner Organisation(s)**

Constraints Technologies International Pty Ltd

**Administering Organisation** Monash University

**Project Summary**

This project will target major savings in airlines, trucking, rail and public transport, with resulting benefits for industrial logistics, travel and tourism. The results discovered within the project will enable the industrial partner, CTI, to develop solutions for major companies worldwide. The results can also be transferred to other industrial optimisation applications, such as mining, services and manufacturing. Finally the project will build on Australia's international prominence in data analysis and combinatorial optimisation, and capitalise on a major opportunity for the Australian software industry.

**LP0883416** Prof I Zukerman; Dr Y Marom

**Approved Project Title** **Sentiment detection from opinion surveys -- the quest for customer and employee satisfaction**

**2008 :** \$ 52,500  
**2009 :** \$ 105,000  
**2010 :** \$ 102,500  
**2011 :** \$ 50,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

GAPbuster Worldwide

**Administering Organisation** Monash University

**Project Summary**

The research will yield improved international standing through scientific advances disseminated through high impact refereed publications and open source software. The advances made through the application of sophisticated probabilistic techniques to Language Technology problems will attract post-graduate students, and promote commercial interest. The demonstration prototype will provide proof of concept of an application that enables business intelligence to automatically process free-form feedback from customers and employees, with resultant recommendations leading to increased customer and employee satisfaction. The applicability of the outcomes of this research to service industries will further improve Australia's service reputation.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### RMIT University

**LP0883894** Prof SK Bhargava; Prof PN Johnston; Dr SC Grocott

**Approved Project Title** **Chemistry of uranium extraction - studies on the dissolution of uranium ores in a complex solution matrix**

**2008 :** \$ 75,500

**2009 :** \$ 152,500

**2010 :** \$ 147,000

**2011 :** \$ 177,000

**2012 :** \$ 107,000

**Primary RFCD** 2599 OTHER CHEMICAL SCIENCES

APA(I) Award(s): 2

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

BHP Billiton

**Administering Organisation** RMIT University

#### **Project Summary**

Olympic Dam is the world's largest uranium deposit. With a planned massive expansion of the mine's operations, it could generate more than \$10b per year. The mineral ores found there, however, are highly complex and poorly understood. This project will investigate and determine the detailed characteristics and chemistry of the mineral ore and offer process improvements that will increase the productivity and improve the economics of extraction of the ore. This project will also address the serious deficiency of researchers in this field by creating a sustainable skills development program in mineral extraction and separation technology.

**LP0883527** Prof SN Bhattacharya; Dr RK Gupta; Dr R Zheng

**Approved Project Title** **Modelling rheology and flow parameters of injection moulding of liquid crystal polymer materials**

**2008 :** \$ 22,500

**2009 :** \$ 46,000

**2010 :** \$ 46,500

**2011 :** \$ 23,000

**Primary RFCD** 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

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

Moldflow Pty Ltd.

**Administering Organisation** RMIT University

#### **Project Summary**

Australian company Moldflow is a world leader in the modelling and simulation of injection moulding plastic parts, yet its sophisticated software is inadequate for liquid crystalline polymers. This research aims to redress this by appropriate rheological study of these materials, incorporating suitable rheological model in the simulation and by experimental validation. The benefit will be new knowledge of the injection moulding process, enhancement of Australia's scientific reputation in this field, extension of the Moldflow software to a wider polymer range, new markets nationally and internationally, competitive edge of the improved software and contribution to national economy due to new business.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883291** Prof WE Cartwright; A/Prof CA Arrowsmith; Dr LK Vaughan; Dr BJ Morris

**Approved Project Title** **Geo-placed Knowledge: developing a methodology for provisioning stakeholders in natural environments management with integrated media tools**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Parks Victoria

**Administering Organisation** RMIT University

### Project Summary

The objectives of this research are to employ the concept of a geo-knowledge tool to construct a virtual geographical information repository. It will build and evaluate the effectiveness of a Web-delivered GeoKnowledge tool to facilitate better access to (geo)information about the nation. It will develop 'rules' for guiding the design of content, information prospecting support, data mining and interface access within the context of a contemporary atlas. Finally, it has an underlying goal to understand the complexities of provisioning and providing a Web-delivered tool that can be employed by multi-disciplinary teams for understanding geographical information about national parks throughout Australia.

**LP0884154** Prof PJ Coloe; Prof MP Jennings; Dr R Youil; Dr YG Abs EL-Osta; Dr PJ Blackall; Dr C Turni

**Approved Project Title** **Towards the development of a novel live vaccine for the control of Glässer's disease (Haemophilus parasuis), a globally significant respiratory disease of swine.**

**2008 :** \$ 79,328

**2009 :** \$ 156,440

**2010 :** \$ 171,250

**2011 :** \$ 94,138

**Primary RFCD** 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Bioproperties Pty Ltd

**Administering Organisation** RMIT University

### Project Summary

Respiratory diseases are common in intensively housed pigs, costing the Australian industry millions of dollars in lost production annually. Glässer's is a highly contagious and often fatal respiratory disease of pigs. Antibiotic therapy is expensive and often results in the emergence of antibiotic resistant organisms. There is also a trend to move away from the use of antibiotics in food production animals. Current vaccines are based on inactivated preparations and do not offer a high level of immune protection. Therefore, there is a great need worldwide for a live vaccine for the effective control of Glässer's disease.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883615** Prof JF Fien; Prof RR Wakefield; Dr ER Charlesworth; Dr R Horne; Prof JC Altman; A/Prof M Christie; Ms PR Sullivan; Mr S Hamilton

**Approved Project Title** **More than a Roof Overhead: Meeting the Need for a Sustainable Housing System in Remote Indigenous Communities**

**2008 :** \$ 38,440

**2009 :** \$ 76,881

**2010 :** \$ 76,881

**2011 :** \$ 38,440

**Primary RFCD** 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APA(I) Award(s): 3

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

Department of Housing and Works, WA

Territory Housing, NT

Indigenous Business Australia

Bawinanga Aboriginal Corporation

Centre for Appropriate Technology

**Administering Organisation** RMIT University

### **Project Summary**

Many Indigenous Australians live in substandard and over-crowded accommodation, and experience poor health, education, family stability and child-safety outcomes as a result. The lack of improvement in this situation is largely due to levels of funding and approaches to construction and management inadequate to the scale of the problem. This situation is changing and new funding and policies are being established. The researchers will work alongside housing providers and selected Indigenous communities in Western Australia and Northern Territory to develop procurement, construction and housing management practices that will meet the critical need for more affordable, appropriate and sustainable housing.

**LP0883371** A/Prof AJ McMurray; Prof K Hindle; Dr RJ Inbakaran; Mr B Stevens

**Approved Project Title** **Indigenous Entrepreneurship in Victoria, Australia: Reconciling Mainstream Business Practice and Indigenous Community Values**

**2008 :** \$ 35,500

**2009 :** \$ 71,000

**2010 :** \$ 35,500

**Primary RFCD** 4203 CULTURAL STUDIES

APA(I) Award(s): 2

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

Koori Business Network

**Administering Organisation** RMIT University

### **Project Summary**

Indigenous entrepreneurship is a mechanism for addressing 'reconciliation' one the Nation's major issues. This study recognises the interrelations between Indigenous Australians as individuals and members of wider community groups and organisations and addresses key strategic documents including 'A Fairer Victoria' which is concerned about the disadvantaged in a developed society. Identifying Indigenous cultural values and the exigencies and pressures (including mainstream cultural pressure) impacting on Indigenous entrepreneurs assists with removing those impediments and will strengthen key strategic Indigenous Policies and programs in the interests of national economic prosperity and national reconciliation.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883288** A/Prof K Zhang; Dr F Wu; Prof C Rizos; Dr S Lim; Prof J Le Marshall; Dr A Rea; Dr Y Kuleshov

**Approved Project Title** **Satellite-Based Radio Occultation for Atmospheric Sounding, Weather Forecasting and Climate Monitoring in the Australian Region**

**2008 :** \$ 87,409

**2009 :** \$ 177,802

**2010 :** \$ 180,752

**2011 :** \$ 90,359

**Primary RFCD** 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Australian Bureau of Meteorology

**Administering Organisation** RMIT University

### **Project Summary**

Global climate change and its associated risks are serious issues because the resultant storms, fires, floods, droughts and cyclones are weather events affecting Australia. However, the predictability of such phenomena is seriously limited due to sparse atmospheric sensor distribution. This project will investigate new space-borne and ground-based radio occultation techniques, atmospheric sounding technologies and their fusion to overcome such constraints. This project is dedicated to developing superior national capabilities in anticipating, analysing and investigating critical meteorological threats to Australia. This research will significantly upgrade Australia's meteorological services and contribute to the global community.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Swinburne University of Technology

**LP0883888** Dr AV Babanin; Prof IR Young; Prof WR Phillips; Prof AM Donelan; Dr V Makin; Dr F Arduin

**Approved Project Title** **Oceanic Conditions within Extreme Tropical Cyclones**

**2008 :** \$ 135,000

**2009 :** \$ 205,000

**2010 :** \$ 120,000

**2011 :** \$ 50,000

**Primary RFCD** 2912 MARITIME ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Woodside Energy Ltd.

**Administering Organisation** Swinburne University of Technology

**Project Summary**

Australia's tropical and subtropical areas include major infrastructure projects such as the North West shelf oil and gas projects, major mining operations, export ports, natural environments such as the Great Barrier Reef and major tourism industries. All these industries are crucially impacted by extreme tropical cyclones. Despite the importance of these systems, our present understanding of tropical cyclones is incomplete. This project will significantly enhance our ability to carry out accurate engineering design of critical offshore infrastructure, as well as marine forecasts in such environments. As such, the project will have major scientific, economic and social benefits for Australia.

**LP0884003** Prof DP Crewther; Dr A Pipingas; A/Prof SG Crewther; Prof AJ Sinclair

**Approved Project Title** **Biomarkers and objective assessment of cognitive and brain effects of fish oil dietary supplementation**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 3801 PSYCHOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Novasel Australia Pty Ltd

**Administering Organisation** Swinburne University of Technology

**Project Summary**

There are potential widespread community benefits from knowing whether consuming fish oils will improve cognitive function. This is manifest in children and even more so in those suffering attention deficits at a time when inattention and hyperactivity is likely to permanently lower their overall career prospects.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883848** A/Prof KJ Hulse; A/Prof DJ MacKenzie; Dr A Hollows

**Approved Project Title** **Families on the Edge: Lived Experiences of Citizenship of Homeless Families**

**2008 :** \$ 18,321

**2009 :** \$ 36,373

**2010 :** \$ 36,042

**2011 :** \$ 17,991

**Primary RFCD** 3701 SOCIOLOGY

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

Hanover Welfare Services

**Administering Organisation** Swinburne University of Technology

### **Project Summary**

Families on the Edge will provide an in-depth understanding of the lived experiences of homeless families, comprising predominantly women and children, who are one of the most marginalised and under-researched groups in Australian society. The findings will enable governments and not-for-profit agencies to improve services for homeless families to improve their health and well being. They will also inform policy debates about other approaches which draw on human rights and the rights/responsibilities of citizenship. The projects findings will provide a sound framework and empirical basis for improvements to legislation, policy and practice across a range of areas.

**LP0883584** Dr PR Stoddart

**Approved Project Title** **Optical Fibre Touch Sensor for Cochlear Implants**

**2008 :** \$ 30,000

**2009 :** \$ 60,000

**2010 :** \$ 60,000

**2011 :** \$ 30,000

**Primary RFCD** 2404 OPTICAL PHYSICS

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

Cochlear Ltd

**Administering Organisation** Swinburne University of Technology

### **Project Summary**

The touch sensor will be part of a cochlear implant, which is surgically implanted to provide a sense of hearing for people who are profoundly or severely deaf. Approximately 100,000 people worldwide have received cochlear implants so far. However, the delicate internal structures of the ear can easily be damaged when the implant is inserted. By helping surgeons to preserve the inner ear, this sensor will help to further improve the hearing ability of future patients. The 'bionic ear' was invented in Australia and this project will help to ensure the continued success of Australia's world leading implant industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884065** Prof P Taylor; A/Prof L Brooke; Prof PF McDonald; Prof L Rolland; Prof MA Steinberg

**Approved Project Title** **Working late and the spectre of uselessness: Sustaining labour supply in a globalising economy**

**2008 :** \$ 61,500  
**2009 :** \$ 123,000  
**2010 :** \$ 105,000  
**2011 :** \$ 43,500

**Primary RFCD** 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
Queensland Department of Employment & Industrial Relations  
Infohrm  
APOP

**Administering Organisation** Swinburne University of Technology

### Project Summary

A buoyant economy and strong employment growth resulting in unfilled vacancies is frustrating business. Population ageing may exacerbate this, reducing labour supply and consequently industrial output. To assist, the Government is recommending increased employment among older workers. As yet, the evidence base for informing actions is inadequate but points to complex scenarios where older workers may not necessarily fair well. Better understanding the determinants of their employment and of employer actions would help clarify the role of public policy. Also, understanding how other nations are responding is of strategic importance as this will directly influence the Australian labour market.

**The University of Melbourne**

**LP0883573** Prof AJ Baker; Dr SK Arndt; Mr JD Gregory

**Approved Project Title** **Combining recycled water use, biofuel production and phytoremediation of contaminated land and biosolids.**

**2008 :** \$ 50,000  
**2009 :** \$ 100,000  
**2010 :** \$ 100,000  
**2011 :** \$ 50,000

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Melbourne Water Corporation

**Administering Organisation** The University of Melbourne

**Project Summary**

The storage of biosolids, by-products of sewage treatment, is an environmentally unsustainable practice exacerbated by the presence of inorganic and organic contaminants. Phytoremediation is a plant-based technology which is potentially a cost-effective option for progressive long-term and sustainable clean-up of contaminated soils and sediments. Combining metal extraction by plants with reuse of wastewater and the production of a biofuel will provide multiple benefits of a cleaner environment, water conservation, waste reduction, carbon capture and a reduction in fossil fuel use. Development of such a low-cost combined bioenergy/remediation system will be of considerable local/regional benefit and national significance.

**LP0884047** A/Prof P Batterham

**Approved Project Title** **Identification of the targets of a novel metalloproteinase inhibitor used for the treatment of human head lice**

**2008 :** \$ 45,000  
**2009 :** \$ 92,500  
**2010 :** \$ 95,000  
**2011 :** \$ 47,500

**Primary RFCD** 2702 GENETICS

**Collaborating/Partner Organisation(s)**

Hatchtech Pty Ltd

**Administering Organisation** The University of Melbourne

**Project Summary**

Human head lice are difficult to control. This project examines a new type of ovicidal treatment that prevents louse eggs from hatching. The goal is to understand precisely how this treatment is ovicidal, so that even more effective products might be designed. Beyond the benefits of providing a safe and reliable treatment option for a troublesome pest, the development of this product will be a significant step forward for the Australian pharmaceutical industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883437** A/Prof PM Brown; Dr E Care; Prof B Raban; Prof FW Rickards; Mr T O'Connell

**Approved Project Title** **The Young Learners' Project: Identifying personalised teaching strategies for early literacy in children in preschool and the first year of school**

**2008 :** \$ 45,000  
**2009 :** \$ 90,000  
**2010 :** \$ 90,000  
**2011 :** \$ 107,734  
**2012 :** \$ 62,734

**Primary RFCD** 3303 PROFESSIONAL DEVELOPMENT OF TEACHERS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Australian Scholarships Group

**Administering Organisation** The University of Melbourne

**Project Summary**

High quality learning experiences coupled with personalised, evidence-based adult support in the preschool years shape children's life-long attitudes and motivation for learning, and form the basis of strong outcomes in adulthood. Of particular importance is the development of literacy. Not all children, however, have such experiences and some need extra support from their families and teachers. From this study knowledge will be gained that will assist teachers and parents to support children before beginning school so that they are prepared for formal literacy learning. This will lead to greater prospects of financial and social benefits in adulthood.

**LP0883260** Prof M Considine; A/Prof JM Lewis

**Approved Project Title** **Activating states: transforming the delivery of 'welfare to work' services to the long-term unemployed in Australia, Great Britain and the Netherlands**

**2008 :** \$ 49,500  
**2009 :** \$ 98,000  
**2010 :** \$ 48,500

**Primary RFCD** 3602 POLICY AND ADMINISTRATION

**Collaborating/Partner Organisation(s)**

Jobs Australia

NESA

**Administering Organisation** The University of Melbourne

**Project Summary**

With declining unemployment, the possibility of labour force shortages in future years, and an annual expense of \$20 billion on income support in Australia, policy makers are concerned with increasing the economic participation of social security recipients. This project will provide policy makers and service providers with important comparative assessments of the way policies designed to promote economic participation are executed by frontline staff and will provide essential data for designing policy which is more effective in assisting the unemployed to find sustainable paid employment. It will address the National Research Priority of promoting and maintaining good health through strengthening Australia's social and economic fabric.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884087** A/Prof JS Evans; A/Prof SV Hanly; Prof S Dey; Dr B Krongold

**Approved Project Title** **Gigabit Wireless: Setting the Standard for Tomorrow's Broadband**

**2008 :** \$ 65,285

**2009 :** \$ 185,652

**2010 :** \$ 229,211

**2011 :** \$ 199,220

**2012 :** \$ 133,932

**2013 :** \$ 43,556

**Primary RFCD** 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

NEC Australia

**Administering Organisation** The University of Melbourne

### Project Summary

This project will strengthen a long-term alliance between researchers at the University of Melbourne and NEC Australia, one of the few multinational research laboratories with significant R & D presence in Australia. Researchers at the University of Melbourne with expertise in communication theory fundamentals will collaborate with experienced research and design engineers at NEC, to produce fundamental research, and the resulting design tools and intellectual property that will provide a new direction for wireless broadband access. The project will provide high-quality postgraduate and postdoctoral training in an area of great relevance to the Australian telecommunications industry.

**LP0883896** Prof BJ Galligan; Dr MS Henry-Waring; Dr M Boese

**Approved Project Title** **Resettling Visible Migrants & Refugees in Regional and Rural Victoria**

**2008 :** \$ 60,000

**2009 :** \$ 115,000

**2010 :** \$ 115,000

**2011 :** \$ 60,000

**Primary RFCD** 3701 SOCIOLOGY

APA(I) Award(s): 1

APDI Dr M Boese

**Collaborating/Partner Organisation(s)**

Municipal Association Victoria

Victorian Multicultural Commission

**Administering Organisation** The University of Melbourne

### Project Summary

Increasing numbers of visible migrants and refugees are settling in rural and regional Australia. Critical knowledge of how this is working is of national significance as it can improve cohesiveness, sustainability and quality of diverse communities and intergovernmental policies. By working directly with our industry partners in local and state government in Victoria, this project will provide concrete examples of good practice which will also be of benefit nationally. The project findings will have far-reaching implications for our understanding of migrant and refugee resettlement in Australia; and will consolidate Australia as an important site of international expertise.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883300** Dr SL Gras; Dr RR Dagastine; A/Prof SE Kentish; Dr MA Auty

**Approved Project Title** **From Milk to Curd: Molecular Assembly and Microstructure in Complex Dairy Products**

**2008 :** \$ 30,000  
**2009 :** \$ 60,000  
**2010 :** \$ 60,000  
**2011 :** \$ 30,000

**Primary RFCD** 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
Dairy Innovation Australia Ltd

**Administering Organisation** The University of Melbourne

### Project Summary

This project will benefit rural and regional dairy communities and manufacturers. It will help offset the negative effects of drought and climate change by increasing productivity, yield and innovation. It should generate at least ten million dollars in increased dairy sales and provide new domestic and export market opportunities. The tools for increased product consistency and international research links will decrease risks in manufacturing and increase competitiveness. Social benefits include increased returns to dairy farmers, improved employment and increased spending in rural and regional areas. The project will also train engineers, addressing a recognised skills shortage and increase environmental sustainability.

**LP0884029** Dr DB Grayden; Prof AN Burkitt; Prof HJ McDermott; Dr JM Heasman; Prof Dr T Lenarz; Dr A Buechner

**Approved Project Title** **Individualized cochlear implant sound coding: Optimized algorithms for better hearing**

**2008 :** \$ 50,000  
**2009 :** \$ 95,000  
**2010 :** \$ 85,000  
**2011 :** \$ 40,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
Cochlear Limited

**Administering Organisation** The University of Melbourne

### Project Summary

One in six Australians is affected by hearing loss. Hearing loss impacts on a person's educational and employment opportunities, resulting in a significant economic impact upon Australia. Over 10% of people with hearing impairment have a severe or profound hearing loss and may be candidates for a cochlear implant. Current cochlear implant sound processing only offers limited benefit to users. This project represents a truly innovative pathway forward in the development of cochlear implant sound coding that could substantially increase the speech perception of users, enabling these people to become and remain active and productive members of our community.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883287** Prof AA Hoffmann; A/Prof C Tang; Dr RJ Williams; Dr IM Mansergh

**Approved Project Title** **An Integrated Assessment of the Impacts of Climate Change on Victorian Alpine Ecosystems: Detecting and Managing Ecological Change**

**2008 :** \$ 72,000

**2009 :** \$ 134,875

**2010 :** \$ 130,750

**2011 :** \$ 163,250

**2012 :** \$ 95,375

**Primary RFCD** 2702 GENETICS

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

Department of Sustainability and Environment  
Parks Victoria

**Administering Organisation** The University of Melbourne

### **Project Summary**

Climate change threatens biodiversity in alpine areas of Australia. This project seeks to predict how plants, soils and small animals will respond to warming and the associated increased risk of bushfire. Our project uses chambers placed out in the field to simulate warming conditions, and measures plant growth and development, and small animal community structure within the chambers. We also assess the effects of climate change on soil processes. The information is used to evaluate the ability of alpine plants and animals to deal with climate change and to identify ways managers can help maintain biodiversity in this fragile ecosystem.

**LP0883232** Prof CF Humphreys; Prof SL Swain; Mr GJ McCarthy; Dr AJ Brown-May; Ms C Clare; Mrs M Bamblett; Ms C Asquini

**Approved Project Title** **Who Am I? The archive as central to quality practice for current and past care leavers (Forgotten Australians)**

**2008 :** \$ 72,064

**2009 :** \$ 154,155

**2010 :** \$ 176,099

**2011 :** \$ 94,007

**Primary RFCD** 3702 SOCIAL WORK

APA(I) Award(s): 1

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

Centre for Excellence in Child and Family Welfare  
Victorian Aboriginal Child Care Agency  
Department of Human Services

**Administering Organisation** The University of Melbourne

### **Project Summary**

The project responds to the recommendations of the Forgotten Australians and its predecessor Reports about the need to improve record-keeping and archiving practice in the health and welfare sector. In partnership with past and present care-leavers and a consortium of 13 community service organisations, the peak body, and government, it will develop a digital archive utilising innovative technologies which will both enable access to contextual material from the past and provide a model for constructing records in the future, in order to help overcome the ongoing impact which out-of-home care has had on the health of careleavers.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883427** Prof CF Humphreys; A/Prof B Jordan; Dr JA Smith; Ms NC Watt

**Approved Project Title** **Cumulative Harm: Reducing child abuse through improved decision-making**

**2008 :** \$ 12,813  
**2009 :** \$ 25,627  
**2010 :** \$ 25,627  
**2011 :** \$ 12,813

**Primary RFCD** 3210 CLINICAL SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Royal Children's Hospital

**Administering Organisation** The University of Melbourne

**Project Summary**

In 2005/06 56,000 cases of child abuse were substantiated in Australia, and this figure is rising exponentially. Disillusionment is growing with an incident based approach to children's safety which fails to either acknowledge or intervene effectively in the cumulative effects of harm to the child's development and well-being. This project uses the leverage of new legislation to re-focus on an earlier intervention with vulnerable children at risk of cumulative harm within a hospital setting. An interdisciplinary lens is brought to the development of new knowledge to provide a better and healthier start to life for this group of children.

**LP0883457** Prof LJ Johnston; Dr PJ Anderson; Dr RW Hunt; A/Prof K Spence; A/Prof B Jordan; A/Prof N Badawi

**Approved Project Title** **The emotional and social burden of caring for a young child with complex health needs**

**2008 :** \$ 20,048  
**2009 :** \$ 40,097  
**2010 :** \$ 40,097  
**2011 :** \$ 30,048  
**2012 :** \$ 10,000

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Royal Childrens Hospital

Office for Children

Goulburn Valley Health

Childrens Hospital at Westmead

**Administering Organisation** The University of Melbourne

**Project Summary**

The National Agenda for Early Childhood and the Stronger Families and Community Strategy provide a framework for achieving efficient and effective outcomes in early childhood. This project will contribute to those strategies by gaining an understanding of the currently unknown issues faced by the group of families of young infants and children with complex health needs in a variety of geographic, community and service settings, and the government supported services required. The identification of risk and resilience factors will enable the early detection of children at 'high-risk' and provide the opportunity to implement preventative and early intervention programs.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883237** Dr E Killackey; Prof HJ Jackson; Dr R Scutella; Dr Y Tseng; Prof JI Borland

**Approved Project Title** **Improving Employment Outcomes in Early Psychosis: Social and Economic Benefits of Early Intervention.**

**2008 :** \$ 80,400  
**2009 :** \$ 152,959  
**2010 :** \$ 109,743  
**2011 :** \$ 37,184

**Primary RFCD** 3210 CLINICAL SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
 ORYGEN Research Centre

**Administering Organisation** The University of Melbourne

### Project Summary

Over 74% of people with psychotic illnesses like schizophrenia, despite wanting to work, are unemployed, more than any other disability group. This project examines an evidence-based method in which young people with psychosis can be effectively supported to return to the competitive labour market. In Australia, unemployment of people with schizophrenia costs \$927 million, over half the total illness costs of schizophrenia. For people with psychosis, unemployment exacerbates social and economic marginalisation. This project aims to reduce the economic cost of unemployment among the mentally ill as well as using employment to reduce social marginalisation of people with mental illness.

**LP0884108** Dr EL Lamoureux; Dr G Rees; Dr G Tikellis; A/Prof JE Keeffe; A/Prof JJ Wang; Prof TY Wong; Dr R Audehm

**Approved Project Title** **Overcome Barriers to Optimal Diabetes Management: Randomized Controlled Trial of Education/Consultation Interventions to Improve Self-Management of Diabetes.**

**2008 :** \$ 17,881  
**2009 :** \$ 55,595  
**2010 :** \$ 95,528  
**2011 :** \$ 93,465  
**2012 :** \$ 57,426  
**2013 :** \$ 21,775

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
 Diabetes Australia-Victoria

**Administering Organisation** The University of Melbourne

### Project Summary

In addition to improving self care and quality of life in people with diabetes, the cost effectiveness component of the trial will provide other valuable data. Considering that the costs associated with diabetes and other associated health complications (i.e diabetic retinopathy) are estimated to be more than AU\$10 billion, our intervention has a considerable potential to deliver substantial savings to the Australian community. The study will also generate a closer coordination between primary and tertiary care settings. This proposed trial will contribute substantially to future health policies related to personnel, resources and funding allocated to diabetes, eye health and rehabilitation.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883727** Dr S Mallett; A/Prof AM Kavanagh; Prof DA Rosenthal; Ms S James

**Approved Project Title** **Healthier and sustainable futures for disadvantaged young people**

**2008 :** \$ 33,652  
**2009 :** \$ 67,900  
**2010 :** \$ 69,215  
**2011 :** \$ 34,967

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

**Collaborating/Partner Organisation(s)**

Melbourne Citymission

**Administering Organisation** The University of Melbourne

**Project Summary**

The economic health and social costs to the Australian community of young people who disengage from post-secondary education and employment are immense. Development of National, State and local policy, programs and services for these young people is significantly hampered by a widely acknowledged lack of evidence about disadvantaged young peoples post-compulsory education and employment pathways. This research will establish an evidence base that will inform the development of targeted cross-sectoral government policy and programmatic responses to these young people, improve delivery of relevant health, welfare and education services, thereby enabling disadvantaged young people to create healthier, economically sustainable futures.

**LP0883265** A/Prof E Manias; Dr RG Riley

**Approved Project Title** **Examining healthcare professionals' communication across the surgical pathway to improve patient safety**

**2008 :** \$ 20,700  
**2009 :** \$ 42,896  
**2010 :** \$ 44,392  
**2011 :** \$ 22,196

**Primary RFCD** 3211 NURSING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Eastern Health

**Administering Organisation** The University of Melbourne

**Project Summary**

Recent data show breakdowns in communication contributed to 16% of sentinel events in Australia, the majority of which were of a surgical nature. Financial costs associated with adverse events are enormous, estimated at around \$A2billion/year. Economic burden is predicted to increase with further complexities surrounding patients' surgical care. This study will result in new knowledge about communication patterns to inform the development of reporting methods and strategies that positively influence the practices of healthcare professionals. Strategies could be extrapolated to the broader healthcare sector, and provide tactical direction aimed at averting clinical errors, preventing patient harm and reducing healthcare costs.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883825** Dr C Manzie; Prof MC Good; Dr JR Binns; Prof N Bose

**Approved Project Title** **Enhancing the fidelity of low-cost human-in-the-loop physical sailboat simulators**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2301 MATHEMATICS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Virtual Sailing Pty Ltd

**Administering Organisation** The University of Melbourne

### **Project Summary**

The project will develop a new generation of human-in-the-loop (HiL) sailboat simulators to strengthen R&D within Australia's largest sporting goods market and to increase the participation rates in sailing. The resulting HiL developments will be useful to a wide range of educational, sporting and training applications, including for example motorcycle and automotive driver simulators. Furthermore, the innovative boat-to-boat interaction capability of the simulations will lead to improved aids in high performance yacht racing like the America's Cup.

**LP0884052** Dr MA McCarthy; Dr A Boxshall; A/Prof RI Beilin; Dr LB Flander

**Approved Project Title** **Optimizing the allocation of resources for defending marine protected areas against invasive species.**

**2008 :** \$ 20,000

**2009 :** \$ 45,000

**2010 :** \$ 50,000

**2011 :** \$ 25,000

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Parks Victoria

**Administering Organisation** The University of Melbourne

### **Project Summary**

The National Representative System of Marine Protected Areas contributes directly to the protection of marine biodiversity, and to Australia's international obligations under the UN Convention on Biological Diversity. Non-indigenous species have potential to undermine native biodiversity in marine protected areas across Australia. By identifying the most effective strategies for dealing with potential incursions of non-indigenous species in Victorian marine national parks and sanctuaries, the project will make a valuable contribution to the viability of local marine ecosystems and the maintenance of biodiversity. Furthermore, it will provide a template to aid similar decision-making in other marine protected areas around the country.

**LP0883942** A/Prof PA Mendis; Prof B Samali; Prof B Uy

**Approved Project Title** **Innovative Retrofitting Techniques for the Protection of Anchorage Zones in Cable-Stayed Bridges Subjected to Blast Loads**

**2008 :** \$ 32,500

**2009 :** \$ 68,500

**2010 :** \$ 73,000

**2011 :** \$ 37,000

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Road Traffic Authority (RTA)

**Administering Organisation** The University of Melbourne

### **Project Summary**

The project will seek to develop an innovative technology to retrofit anchorage zones in cable-stayed bridges subjected to close-in detonations and severe impulsive loading, through a comprehensive theoretical and experimental study. The innovative material used for the strengthening purposes developed as part of the study will greatly assist engineers in protection and retrofitting schemes of bridges. The results can be communicated directly to the relevant authorities, thus improving Australia's capabilities in dealing with extreme events.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883417** Prof W Moran; Dr DQ Huynh; Dr B La Scala

**Approved Project Title** **Scalable Robust Video Surveillance over Constrained Networks**

**2008 :** \$ 70,000

**2009 :** \$ 132,500

**2010 :** \$ 117,500

**2011 :** \$ 55,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

SenSen Networks Pty Ltd

**Administering Organisation** The University of Melbourne

### Project Summary

Real-time monitoring of large numbers of people is becoming increasingly important for applications such as efficient service delivery and security against both common crime and terrorism. The use of human operators for such tasks is infeasible due to the large amount of data collected. Existing autonomous video surveillance systems are prone to high numbers of false alarms and often require expensive hardware. This proposal seeks to address both difficulties by using rigorous statistical signal processing methods to optimally fuse information from a network of low-cost cameras.

**LP0883933** A/Prof A Rajabifard; Prof IP Williamson; Dr CJ Pettit

**Approved Project Title** **Automating and integrating spatial data and metadata processes**

**2008 :** \$ 40,000

**2009 :** \$ 75,000

**2010 :** \$ 65,000

**2011 :** \$ 30,000

**Primary RFCD** 2910 GEOMATIC ENGINEERING

**Collaborating/Partner Organisation(s)**

Department of Primary Industries

Department of Sustainability and Environment

Department of Lands NSW

CubeWerx Australia Pty Ltd

AusSoft Pty Ltd

LogicaCMG

**Administering Organisation** The University of Melbourne

### Project Summary

The ability to automatically generate metadata relating to spatial information, and make it available through the Australian SDI will have important benefits not only at an organizational level (with each organization saving time and money in generating their metadata), but at a national level because it will assist delivery of high quality spatial information and services to vast areas of Australia. This will aid in addressing national issues concerned with land management, environmental sustainability, water rights, indigenous land tenure and disaster management, which can only be addressed by having the ability to find and access high quality spatial information.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883951** Prof PJ Scales; Dr DR Dixon; Dr G Newcombe

**Approved Project Title** **New approaches to the treatment of potable water in the presence of algal blooms**

**2008 :** \$ 64,500

**2009 :** \$ 109,500

**2010 :** \$ 98,000

**2011 :** \$ 53,000

**Primary RFCD** 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

United Utilities Australia

SA Water

United Water

Melbourne Water

Barwon Water

**Administering Organisation** The University of Melbourne

**Project Summary**

The processing of blue green algae rich waters and subsequent release of algal metabolites causes taste and odour problems and toxins that affect potable water safety. This project will define a preferred approach to the processing of these waters and provide quantitative analysis tools to help water authorities guarantee water quality and safety. The defined process routes and analysis procedures will also result in better water conservation (lower net water losses in processing). This will allow better regulation of water quality, safety and management by water authorities and improve consumer confidence in the potable water supply.

**LP0883528** Prof CH Schiesser; Dr AS Micallef; Dr U Wille; Mr DM Hall

**Approved Project Title** **Improving Energy Efficiency through Cool Polymers in Building Materials**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2599 OTHER CHEMICAL SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

PPG Industries

**Administering Organisation** The University of Melbourne

**Project Summary**

The advantages of using cool polymers in industrial applications such as building materials are significant. Cooler buildings are a positive contribution to our global environment with reductions in urban heat and smog through energy efficiency. Moreover, by reducing the overall temperature of the surface coating through inclusion and optimization of IR-reflective pigments, this should lead to polymers which are more durable when exposed in exterior environments. It is anticipated that the results from this work will have direct impact on the Australian paint market and potentially the commercial and residential building industries of Australia, combined with obvious economic benefits.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883309** A/Prof RJ Sloggett; Ms NA Tse; Prof CH Schiesser; Dr SP Best; Prof J Drennan; Prof JL Hunter; Dr TJ Learner; Mr A Durham; Ms Z Anuar

**Approved** **The twentieth century in paint**

**Project Title**

**2008 :** \$ 90,945

**2009 :** \$ 181,523

**2010 :** \$ 181,156

**2011 :** \$ 90,578

**Primary RFCD** 4003 CURATORIAL STUDIES

APA(I) Award(s): 4

APDI Ms NA Tse

**Collaborating/Partner Organisation(s)**

Artlab Australia

Getty Conservation Institute

Queensland Art Gallery

National Gallery of Australia

Tasmanian Museum and Art Gallery

National Art Gallery of Malaysia

SEAMEO-SPAFA

Tate Britain

Art Gallery of New South Wales

**Administering Organisation** The University of Melbourne

**Project Summary**

The art market is a major contributor to the Australian economy worth over \$500M per annum. However many modern works created with new materials introduced in the 20th century in Australia and Southeast Asia exhibit problems with deterioration, and there is little research on the use and effects of these materials. Without answers to material based preservation questions collectors, curators and conservators cannot make informed decisions. This project, with partners in Australia, Asia, US and UK will provide fundamental information to assist in formulating management strategies, inform curatorship and develop innovative approaches to conservation and the manufacture of art materials.

**LP0883719** A/Prof JB Smart; Prof M Quartly; Ms LT Christopherson

**Approved** **Between State and World: A History of the National Council of Women of Australia**

**Project Title** **1931-2006**

**2008 :** \$ 18,559

**2009 :** \$ 33,328

**2010 :** \$ 25,386

**2011 :** \$ 10,617

**Primary RFCD** 4301 HISTORICAL STUDIES

**Collaborating/Partner Organisation(s)**

National Council of Women of Australia

**Administering Organisation** The University of Melbourne

**Project Summary**

This project brings together academic historians and women active in the National Council of Women of Australia to write its history. The Council and the broad community of women whom it represents benefit by the validation of their shared memories and their sense of common purpose. The Australian community benefits from the renewal of social capital and the culture of political participation pursued by the Council and now celebrated in its history. And the nation benefits from a new knowledge of the role in national and international policy-making played by the largest coalition of its women citizens.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883889** Prof DW Smith; Prof R Smith; Dr X Shen

**Approved Project Title** **Estimating The Risk of Preterm Birth Using Blood Tests**

**2008 :** \$ 52,500

**2009 :** \$ 105,000

**2010 :** \$ 105,000

**2011 :** \$ 52,500

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

APDI Dr X Shen

**Collaborating/Partner Organisation(s)**

Symbion Health

**Administering Organisation** The University of Melbourne

### **Project Summary**

This research falls under National Research Priority 'A Healthy Start to Life'. The overall aim of this project is to develop risk estimates for preterm birth that may be used in clinical practice for the management of pregnancy. The project is concerned with developing computational methods, software, and a clinical interface that may be used by obstetricians. As well as identifying women at high risk of preterm birth, this approach will also help identify women at very low risk of preterm birth, and so those women more suited to management by midwives, either in a hospital or home birth setting.

**LP0883901** Dr J Torresi; Dr DC Jackson; Dr Il Atmosukarto

**Approved Project Title** **Enhancing immunogenicity of DNA vaccines by targeted delivery to antigen presenting cells.**

**2008 :** \$ 40,000

**2009 :** \$ 40,000

**Primary RFCD** 3202 IMMUNOLOGY

**Collaborating/Partner Organisation(s)**

Lipotek Pty Ltd

**Administering Organisation** The University of Melbourne

### **Project Summary**

Vaccines have proven to be one of the most effective means of preventing infection and also provide promise as a treatment for cancer. However, the range of effective technologies that make possible the delivery of vaccines that can protect against a broad range of infections is limited. DNA based vaccines are attractive because they are relatively easy to produce against a wide range of infections. However, DNA vaccines often provide poor protection against infections. This project will explore a unique technology developed in Australia and that will greatly improve the effectiveness of DNA vaccines against a broad range of diseases.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883610** Dr CJ Walsh; Dr TD Fletcher

**Approved Project Title** **Can dispersed, catchment-scale, urban stormwater retention restore stream ecosystems?**

**2008 :** \$ 50,000

**2009 :** \$ 97,500

**2010 :** \$ 87,500

**2011 :** \$ 87,500

**2012 :** \$ 67,500

**2013 :** \$ 20,000

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Melbourne Water

Shire of Yarra Ranges

**Administering Organisation** The University of Melbourne

**Project Summary**

This project is a world-first, catchment-scale, experimental test of the benefits of new stormwater treatment approaches to stream health. The project, a collaboration with Melbourne Water and the Shire of Yarra Ranges, integrates river, urban stormwater and water resource management for multiple benefits. It should accelerate the uptake of smart, sustainable technologies in stormwater use and management, and identify better investment strategies for urban water and river management. The robust testing of the effect of new treatment design objectives by a catchment-scale experiment will have a strong impact on research in stream ecology and urban water management.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Victoria University

**LP0883920** A/Prof DL Ben-Moshe; Prof GJ Hugo; A/Prof LV Baldassar; Dr TA Joiner; Dr S Francis; Mr O Andreevski

**Approved Project Title** **Australian diasporas and brain gain: exploring current and potential transnational linkages.**

**2008 :** \$ 55,000

**2009 :** \$ 110,000

**2010 :** \$ 87,500

**2011 :** \$ 32,500

**Primary RFCD** 3705 DEMOGRAPHY

APA(I) Award(s): 1

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

Victorian Multicultural Commission  
Australian Vietnamese Women's Welfare Association  
Centre for Multicultural Youth Issues  
Embassy of the Republic of Macedonia  
COASIT Italian Historical Society  
Italian/Australian Welfare and Cultural Centre  
Council for International Trade and Commerce SA Inc

**Administering Organisation** Victoria University

#### **Project Summary**

The research will investigate current and potential future roles of diasporas in both Australia and overseas in facilitating trade and investment. The study will examine their political, cultural and kinship ties with homelands and map the geography of seven diasporas in Australia. This will provide new data that describes the character, motivations and movements of diasporas in Australia. Data analysis will determine the current and potential role diaspora play in adding value to Australian society through 'brain gain' and 'circulation' versus 'brain drain'. Findings will inform migration and social policy aimed at maximising benefits of migration.

**LP0884146** Prof I Thomas; Prof D Bruck

**Approved Project Title** **The role of location on the effectiveness of smoke alarms**

**2008 :** \$ 25,000

**2009 :** \$ 25,000

**Primary RFCD** 2999 OTHER ENGINEERING AND TECHNOLOGY

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

Australian Building Codes Board

**Administering Organisation** Victoria University

#### **Project Summary**

Smoke alarms in buildings are required by the Building Code of Australia (BCA), but the current requirements are less than optimal. This project will provide the basis for optimisation of smoke alarms and the number, interconnection and positioning of smoke alarms in residential buildings. This is expected to lead to reductions in fire fatalities, injuries and property loss.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883282** A/Prof LY Zou; Dr GE Morris; Prof Dr H Song; Mr JT Martin

**Approved Project Title** **High performance conductive mesoporous carbon electrodes: a low energy desalination alternative**

**2008 :** \$ 22,500

**2009 :** \$ 45,000

**2010 :** \$ 45,000

**2011 :** \$ 22,500

**Primary RFCD** 2918 INTERDISCIPLINARY ENGINEERING

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

Docklands Science Park Pty Ltd

**Administering Organisation** Victoria University

### **Project Summary**

The high cost of existing desalination technology has limited its wider application. There is an urgent need for alternatives which require less energy than current methods. The proposed electrosorption process utilising porous carbon electrodes has the advantage of very low energy demand. Electrosorption therefore has the opportunity to become an alternative desalination option for application in a national and global water desalination market. Advancement in water desalination technology has the potential for a profound social, economical and environmental impact. This vital research is aligned with the National Research Priority 1, An Environmentally Sustainable Australia; Priority Goal: Water, A critical resource.

**Queensland**

**Griffith University**

**LP0883807** Dr M Blumenstein; Prof Y Loo; Dr H Guan

**Approved Project Title** **Artificial Intelligence Based Deterioration Model for Development of Bridge Network Maintenance Strategy**

**2008 :** \$ 75,976  
**2009 :** \$ 151,683  
**2010 :** \$ 135,816  
**2011 :** \$ 60,109

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Queensland Department of Main Roads  
 Gold Coast City Council

**Administering Organisation** Griffith University

**Project Summary**

The proposed AI-based methodology in conjunction with a Bridge Management System can tailor-make bridge deterioration models for a given bridge authority. The models so produced will enable effective BMS implementation which generates missing inspection records of past years, establishes optimal MR&R strategies and then reliably forecasts future bridge condition ratings. The methodology will be verified using available bridge datasets of QDMR and GCCC. The methodology is applicable to other bridge authorities throughout Australia and internationally to maintain ageing bridge stock.

**LP0883429** Prof JM Hughes; Dr DA Crook; Dr J Marshall

**Approved Project Title** **Patterns of connectivity and hot-spots of recruitment: a basis for prioritising high value coastal rivers.**

**2008 :** \$ 45,000  
**2009 :** \$ 95,000  
**2010 :** \$ 90,000  
**2011 :** \$ 40,000

**Primary RFCD** 2702 GENETICS

**Collaborating/Partner Organisation(s)**

Department of Sustainability and Environment  
 Department of Natural Resources and Water  
 Melbourne Water  
 Tasmanian Fisheries

**Administering Organisation** Griffith University

**Project Summary**

Provision of water for agricultural, industrial and residential use is becoming increasingly difficult in Australia. By determining the need for important migratory fish species to have access to marine conditions, this project aims to assist managers to identify river systems where changing flow patterns will be particularly detrimental. The project will provide information about the need for artificial opening of estuary mouths, fish ladders and other practical means to ensure the continued survival of these species.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883721** Prof AJ Moran; Ms S Wynn

**Approved Project Title** **The Place of Communication and Consumption: A Case Study of Australian Regional and Rural Cinema Exhibition**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 4001 JOURNALISM, COMMUNICATION AND MEDIA

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Australian Film Commission

**Administering Organisation** Griffith University

### **Project Summary**

The project provides important, up-to-date analysis of a vital sector of Australia's growing service and knowledge economy. It will help government, film industry, arts and business organisations in the formulation of better policies and programs to assist in improving the quality of life for Australians living in regional and rural areas. It enhances research and training environments for junior researchers and postgraduate students, adding value to investigations already in progress. The research also extends consultative and collaborative capacities in cultural experience enhancement and access, community media development and cultural tourism.

**LP0883246** Prof MS Wesley; Dr AK O'Neil; Dr R Ayson; Ms M Letts; Dr ME Clarke

**Approved Project Title** **Australia's Nuclear Choices**

**2008 :** \$ 73,951

**2009 :** \$ 145,902

**2010 :** \$ 138,402

**2011 :** \$ 66,451

**Primary RFCD** 3601 POLITICAL SCIENCE

APA(I) Award(s): 2

APDI Dr ME Clarke

**Collaborating/Partner Organisation(s)**

Department of Defence

Lowy Institute for International Policy

**Administering Organisation** Griffith University

### **Project Summary**

Australia's nuclear choices will be made in the context of a challenging and fluid international strategic environment characterised in Australia's immediate region by heightened global concerns regarding such transnational dilemmas as terrorism, energy security and nuclear proliferation. This project, through exploring the nature, evolution and consequences of contemporary strategic, military and civil nuclear developments impacting on the international non-proliferation regime will enable Australian policy-makers to better calibrate the costs and benefits of potential policy changes across these strategic, regime and market realms of Australia's nuclear interests.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### James Cook University

**LP0883306** Dr TG Blenkinsop; Prof NH Oliver; Dr J Miller; Mr MJ Nugus; Mr J Biggam

**Approved Project Title** **A mineral systems analysis of Australia's largest gold producing deposit: Sunrise Dam Gold Mine, Western Australia**

**2008 :** \$ 56,000

**2009 :** \$ 107,000

**2010 :** \$ 51,000

**Primary RFCD** 2601 GEOLOGY

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

Anglogold Ashanti Australia

**Administering Organisation** James Cook University

#### **Project Summary**

This project will augment existing mineral resources at Australia's largest current gold producing mine, and guide exploration for additional resources in the surrounding district. By understanding the genesis of this exceptional deposit, the study will spawn a new set of targeting criteria that can be used to explore for other world-class deposits in Western Australia and similar geological terranes throughout the world. In the context of high and rising gold prices, the project has the potential to generate billion dollar revenues and substantial employment, and it will deliver advanced training at undergraduate and postgraduate levels.

**LP0884011** Prof WJ Collins; Prof GS Lister; Dr TG Blenkinsop; A/Prof CL Fergusson; Prof RA Henderson; Mr IW Withnall; Mr PJ Donchak

**Approved Project Title** **Crustal Growth in the Northern Tasmanides**

**2008 :** \$ 32,500

**2009 :** \$ 67,500

**2010 :** \$ 67,500

**2011 :** \$ 32,500

**Primary RFCD** 2601 GEOLOGY

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

Geological Survey of Qld

**Administering Organisation** James Cook University

#### **Project Summary**

The Australian and Queensland governments have invested over \$3 million to undertake deep crustal seismic imaging in northern Queensland, providing an extensive new geophysical dataset capable of modelling crustal architecture and geological evolution to unprecedented levels. However, such models will remain untested unless the data is groundtruthed by analysis of rocks at the surface, providing a geological framework for extrapolation into the deep Earth. The framework critically describes when and how crustal blocks were assembled, and the integrated information will generate evolutionary 3D models that will substantially improve mineral exploration targeting in the region.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883720** Dr CA Simpfendorfer; Mr DJ Welch; Dr J Carlson

**Approved Project Title** **Spatial ecology of inshore predators in tropical marine systems and implications of marine protection zones**

**2008 :** \$ 32,500

**2009 :** \$ 65,000

**2010 :** \$ 65,000

**2011 :** \$ 32,500

**Primary RFCD** 3007 FISHERIES SCIENCES

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

Great Barrier Reef Marine Park Authority  
Queensland Department of Primary Industries and Fisheries  
National Marine Fisheries Service  
Queensland Seafood Industry Association

**Administering Organisation** James Cook University

### **Project Summary**

Coastal development and threats of global climate change mean that coastal ecosystems are under increasing pressure. Developing an understanding of how coastal habitats are used by native fauna and how effective protected areas are in the preservation of these species is critical for future management and sustainable use of resources. This research will provide data for resource and fisheries managers that are valuable for maintenance of several sectors of the economy including tourism and commercial fishing (inshore fishing worth \$23 m a year). The project is linked to a national telemetry network thus providing opportunity for national and international collaboration benefiting scientific, management and coastal communities.

**Queensland University of Technology**

**LP0884020** Prof KW Beagley; Prof P Timms

**Approved Project Title** **Development of an effective vaccine for chlamydial infection: optimisation of a non-toxic cholera toxin-based adjuvant to generate a protective mucosal response**

**2008 :** \$ 15,000  
**2009 :** \$ 30,000  
**2010 :** \$ 30,000  
**2011 :** \$ 15,000

**Primary RFCD** 3202 IMMUNOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Biovitrum AB

**Administering Organisation** Queensland University of Technology

**Project Summary**

Chlamydial genital infections are the most common sexually transmitted infection in Australia and the world and impose a major health burden on the community. Chlamydial infections are also associated with cardiovascular disease, Australia's biggest killer and asthma, another condition that has increased significantly in prevalence in the past 10 years. This project will evaluate the effectiveness of a new adjuvant as a first step towards the development of a vaccine to target these important infections.

**LP0883447** A/Prof LR Buys; Dr EA Miller; Adj/Prof GM Boulton-Lewis; Prof MD Courtney; Dr R Nayak; A/Prof DJ Anderson

**Approved Project Title** **The neglected dimension of community liveability: Impact on social connectedness and active ageing**

**2008 :** \$ 45,000  
**2009 :** \$ 94,043  
**2010 :** \$ 103,200  
**2011 :** \$ 54,156

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Department of Communities

Council on the Ageing Queensland Inc

Gold Coast City Council

**Administering Organisation** Queensland University of Technology

**Project Summary**

Quality of life and well being are essential to maintaining a healthy and socially-engaged population. This project takes an innovative trans-disciplinary approach in addressing the national research priority of Promoting and Maintaining Good Health and the associated goal, Ageing well, ageing productively through research that identifies the attributes of communities that foster or inhibit social engagement. The outcomes of the project will inform policy makers, planners and service deliver organisations about ways to identify, improve or maintain safe housing, transport and community environments for the benefit of all Australians.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884097** Prof SD Cunningham; Dr RJ King; A/Prof JC Drennan; Dr K McWilliam; Dr JM Burns; Mr C Kuddell

**Approved Project Title** **Promoting youth wellbeing through participatory digital media: A multidisciplinary assessment of the mental health outcomes of cyber-participation**

**2008 :** \$ 15,313

**2009 :** \$ 30,627

**2010 :** \$ 30,627

**2011 :** \$ 15,313

**Primary RFCD** 4001 JOURNALISM, COMMUNICATION AND MEDIA

APA(I) Award(s): 1

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

Inspire Foundation

Tallstoreez Productionz Pty Ltd

**Administering Organisation** Queensland University of Technology

### **Project Summary**

This innovative, multidisciplinary research addresses the urgent issue of youth mental health, and aims to investigate the impact of digital media participation on improving youth wellbeing. Key national benefits of this research are: the significant potential to contribute to the larger conception, prevention and promotion of youth mental health in Australia; evaluation of, and subsequent evidenced-based innovations, of POs' digital media programs to increase level of support for youth; and the training provided to emerging researchers in the project team.

**LP0883549** A/Prof JD Davey; Mr D Wishart; Dr HC Biggs

**Approved Project Title** **Development and evaluation of an Occupational Health and Safety framework for work related driving**

**2008 :** \$ 12,500

**2009 :** \$ 25,000

**2010 :** \$ 25,000

**2011 :** \$ 12,500

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

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

Ipswich City Council

Redland Shire Council

Tweed Shire Council

Logan City Council

Gold Coast City Council

Caboolture Shire Council

Beaudesert Shire Council

**Administering Organisation** Queensland University of Technology

### **Project Summary**

This project will develop and evaluate an Occupational Health and Safety competency framework for work related road safety practices within seven council operational vehicles fleets. The results from this research will apply to work related driving in numerous organisations and communities and it is expected that results will carry over into the public domain as organisations involved comprise employees that are representatives of local communities. The information obtained from this research will have economic implications in numerous small vehicle operations that currently lack resources to obtain and develop the information and outcomes of this research program.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884074** A/Prof U Dulleck; A/Prof B Torgler; Dr CJ Newton

**Approved Project Title** **Using Heart Rate Variability measurements to identify the effects of stress on decision making**

**2008 :** \$ 51,177

**2009 :** \$ 74,452

**2010 :** \$ 42,994

**2011 :** \$ 19,719

**Primary RFCD** 3401 ECONOMIC THEORY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Grund Pfahl und Sonderbau GmbH

Autonom Talent Consulting GmbH

SOS Kinderdorf/Children Villages

**Administering Organisation** Queensland University of Technology

**Project Summary**

Rationality and the willingness to cooperate is an important aspect of human decision making. Research shows that certain decisions not only cause stress but are also affected by it. Using modern mobile heart rate monitors, we are able to measure causes and consequences of stress in a controlled and natural environment. This research will help to provide better workplace environments by helping to design better organisations, decreasing the probability of workplace accidents, and advising employees how to better use their talents. This research also helps put Australia on the forefront of modern economic research that aims to open the ultimate "black box" of human decision making.

**LP0883315** Prof JH Frazer; Prof MC Burry; Prof RM Drogemuller; Ms JR Burry

**Approved Project Title** **Assimilation of architectural and services design in early design modelling**

**2008 :** \$ 64,399

**2009 :** \$ 131,777

**2010 :** \$ 136,916

**2011 :** \$ 69,538

**Primary RFCD** 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Project Services

**Administering Organisation** Queensland University of Technology

**Project Summary**

How can buildings in a climate as varied as Australia's balance the best environmental comfort standards for their human occupants, cost and at the same time meet the urgent imperative of reduced energy consumption and associated carbon emissions? This practice-based research will develop tools to support more informed decision making in the earliest stage of an integral approach to services in the design of buildings. It will provide knowledge about designing architecture that is more environmentally responsive, can provide comfortable air in more optimised ways, that consume less energy and do this through promoting smarter use of information in practice.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883320** Prof V Klenowski; Dr S Tobias; Dr K Martin; Ms TG Gertz; Ms EB de Vries  
**Approved Project Title** **Developing culturally-fair assessment practices to achieve greater equity and success for Indigenous students.**  
**2008 :** \$ 39,982  
**2009 :** \$ 69,957  
**2010 :** \$ 59,964  
**2011 :** \$ 29,990  
**Primary RFCD** 3301 EDUCATION STUDIES

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

Catholic Education Diocese of Townsville  
Independent Schools Queensland

**Administering Organisation** Queensland University of Technology

### **Project Summary**

This study will provide a model to build teachers' assessment capacity to address the major problem of underperformance of Aboriginal and Torres Strait Islander students in regional Australia. In comparison with other developed countries, Australia is underperforming in relation to engaging students from disadvantaged groups. This research will advance knowledge about how to develop more culturally-fair assessment tasks using curriculum that embeds Indigenous perspectives and culturally-sensitive pedagogy. Assessment to improve young Indigenous Australian's educational performance will help them succeed in schooling to acquire skills for a more secure, economic, social and cultural future.

**LP0883643** Prof A Luke; Prof V Klenowski; Prof PW Graham; Dr AW Brader  
**Approved Project Title** **Sustainable Selves: A New Assessment Model for Marginalised Secondary Students**  
**2008 :** \$ 43,000  
**2009 :** \$ 86,000  
**2010 :** \$ 86,000  
**2011 :** \$ 43,000  
**Primary RFCD** 3301 EDUCATION STUDIES

APA(I) Award(s): 1

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

Flexible Learning Centre Network  
Brisbane City Council

**Administering Organisation** Queensland University of Technology

### **Project Summary**

Adolescents who have left schooling present a major challenge to Australian social, economic and educational policy. Disengaged youth are more likely to experience social, health and psychological risks, poverty and cultural marginalisation. The project develops an innovative model to assess the skills, knowledge and resources of marginalised students seeking to re-enter education. An authentic portfolio approach to assessment will be piloted and implemented at Queensland's largest provider of re-entry programs, Edmund Rice Foundation Flexible Learning Centre, supported by the Brisbane City Council.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883444** Prof IM Shochet; Dr JE Shakespeare-Finch; Prof R Young; Mr CD Craig; Dr PA Brough

**Approved Project Title** **Promoting resilience in employees working in high-stress occupations.**

**2008 :** \$ 45,413

**2009 :** \$ 92,621

**2010 :** \$ 96,279

**2011 :** \$ 49,071

**Primary RFCD** 3801 PSYCHOLOGY

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

Queensland Police Service

**Administering Organisation** Queensland University of Technology

### **Project Summary**

Promoting positive mental health in the workplace has been identified as a national research priority. Mental health problems such as depression and stress now give rise to social and economic burdens comparable to those due to physiological conditions such as heart disease. Prevention strategies are strongly endorsed by both Government and peak health bodies as a necessity if this burden is to be addressed. Effective workplace strategies for positive mental health promotion will greatly reduce burdens on the health care system and the community whilst increasing productivity in the workplace and quality of life for individuals and their families.

**LP0883998** A/Prof S Tong; Prof GJ FitzGerald; Dr PJ Aitken; Prof RC Wolff; Ms VC Tippett

**Approved Project Title** **An evaluation of the environmental health risk of heatwaves associated with global warming**

**2008 :** \$ 60,955

**2009 :** \$ 108,202

**2010 :** \$ 97,059

**2011 :** \$ 49,812

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

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

Queensland Emergency Services

Queensland Climate Change Centre of Excellence

Queensland Health

Queensland Environmental Protection Agency

**Administering Organisation** Queensland University of Technology

### **Project Summary**

Global warming is associated with an increased frequency of severe weather events including frequent and severe heatwaves. Previous studies have demonstrated that heatwaves are amongst the most deadly disasters to affect the community. This study will identify those members of the community who are most at risk from heatwaves so that strategies may be identified and implemented by governments to protect those people during severe heatwave conditions. The direct benefit to the community will be reduced mortality and morbidity and the consequential reductions in the cost of community and health support services.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### The University of Queensland

**LP0884051** Prof PF Alewood; Dr HC Deeth; Dr MC Broome

**Approved Project Title** **Markers of milk quality in commercially produced UHT milks and milk powders**

**2008 :** \$ 35,000

**2009 :** \$ 70,000

**2010 :** \$ 70,000

**2011 :** \$ 35,000

**Primary RFCD** 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES

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

Dairy Innovation Australia Ltd

**Administering Organisation** The University of Queensland

#### **Project Summary**

Efficient production of safe, wholesome food relies on the application of the best available knowledge of the food material and the processing technologies involved. This project applies proteomics, the most advanced protein analysis technique, to determine the changes that occur in milk during high heat treatment and subsequent storage of the heat-processed milk product. Armed with such knowledge, the dairy processing industry will be able to make informed decisions about processing and storage conditions to ensure the final products provided to the consumer are of the highest possible quality.

**LP0883462** Dr J Batley; A/Prof D Edwards

**Approved Project Title** **Characterising genetic variation in Brassica napus**

**2008 :** \$ 141,509

**2009 :** \$ 283,019

**2010 :** \$ 283,019

**2011 :** \$ 141,509

**Primary RFCD** 2702 GENETICS

APA(I) Award(s): 2

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

Bayer BioScience N.V.

New South Wales Department of Primary Industries

Australian Genome Research Facility Ltd

**Administering Organisation** The University of Queensland

#### **Project Summary**

Applying the latest scientific advances supports society through promoting a knowledge based economy, as well as through securing agricultural productivity and biomedical applications. Establishing these methods places Australia at the forefront of genomics technology with direct applications for Australian agricultural, biomedical and biotechnology industries. Maintaining agricultural production in an unreliable environment remains a national challenge, both for rural and urban communities. This technology will provide a detailed understanding of crop genome variation in relation to agronomic traits and lead to the development of crops that are better suited to the Australian climate, supporting a sustainable agricultural industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883861** Dr JJ Corcoran; Dr P Chhetri; Prof RJ Stimson

**Approved Project Title** **Enhanced agency response strategies through modelling geo-temporal characteristics of emergency services calls**

**2008 :** \$ 16,458

**2009 :** \$ 34,731

**2010 :** \$ 38,887

**2011 :** \$ 20,614

**Primary RFCD** 3704 HUMAN GEOGRAPHY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Queensland Fire and Rescue Service

**Administering Organisation** The University of Queensland

**Project Summary**

Understanding the timing and geographic distribution of emergency calls to agencies such as Fire, Police and Ambulance, is critical to improving emergency response and developing effective preventive strategies. In turn, improved response and prevention strategies can help save lives and minimise economic costs. This project uses advanced geographic and statistical methods to analyse fire incidents and develop the evidence base necessary to inform effective response and prevention strategies. The project will critically assist emergency fire response, but will also provide a case study that can be adapted for other kinds of emergency response.

**LP0883806** Prof BM Degnan; Dr MJ Sellars

**Approved Project Title** **An investigation of the underlying mechanisms that control gender and fertility in the Moreton Bay Bug, *Thenus orientalis***

**2008 :** \$ 20,000

**2009 :** \$ 45,000

**2010 :** \$ 50,000

**2011 :** \$ 70,000

**2012 :** \$ 45,000

**Primary RFCD** 3007 FISHERIES SCIENCES

**Collaborating/Partner Organisation(s)**

Lobster Harvest Pty Ltd

**Administering Organisation** The University of Queensland

**Project Summary**

To date there is no available information on the underlying biochemical and genetic mechanisms that control gender and fertility in *Thenus* spp. Understanding how gender and fertility are controlled in this lobster species will allow development of technologies to exploit desired commercial traits such as reproductive sterility (for genetic protection). Such technologies will facilitate rapid uptake of commercial culture of this high-value species in Australia and establishment of international markets.

**LP0883650** Prof J Foster; Prof JC Quiggin; Dr PE Simshauser; Mr CJ Nalder

**Approved Project Title** **Assessing the impacts of proposed carbon trading and tax schemes on the Australian electricity industry and the overall economy**

**2008 :** \$ 51,647

**2009 :** \$ 102,106

**2010 :** \$ 107,689

**2011 :** \$ 57,231

**Primary RFCD** 3402 APPLIED ECONOMICS

**Collaborating/Partner Organisation(s)**

Babcock & Brown Power Pty Ltd

**Administering Organisation** The University of Queensland

**Project Summary**

Currently, policymakers require a much clearer understanding of the impacts of different carbon abatement policies. Mounting evidence on global warming is making this an increasingly urgent priority. The proposed project is specifically concerned with using state of the art economic modelling approaches to give the best advice possible to policymakers in crafting an environmentally sustainable set of economic policy instruments that can maintain our enviable standard of living well into the future. The findings of the project will be available before the new Kyoto negotiation round commences.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883377** Dr MM Foster; Dr P Henman; Dr JM Fleming; Dr CF Tilse

**Approved Project Title** **Financing and management of lifetime care for adults with acquired disabilities and high care needs**

**2008 :** \$ 36,217

**2009 :** \$ 63,177

**2010 :** \$ 45,215

**2011 :** \$ 18,255

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Motor Accident Insurance Commission

The Public Trustee of Queensland

**Administering Organisation** The University of Queensland

**Project Summary**

Lifetime care for adults with acquired disabilities is of growing public concern. Substantial levels of unmet need, poorly coordinated services and inadequacy of care arrangements to guarantee lifetime care are pressing concerns. Coordinating multi-sector and service inputs is an ongoing problem for policy makers and providers in Australia. The proposed project will develop an empirical understanding of how current systems of financing and management of lifetime care operate at policy and service delivery levels for adults with acquired disabilities. This provides a strategic foundation for policy development and enhanced lifetime care arrangements that will be of relevance to other populations.

**LP0883644** Prof MJ Gidley; Dr GR Monteith; Dr SJ Roberts-Thomson; Prof PN Shaw; Dr RG Dietzgen

**Approved Project Title** **Nutritional properties of mango fruits: linking plant genomics to cellular bioactivities**

**2008 :** \$ 45,000

**2009 :** \$ 90,000

**2010 :** \$ 90,000

**2011 :** \$ 45,000

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

QLD Department of Primary Industries and Fisheries

**Administering Organisation** The University of Queensland

**Project Summary**

Mango fruits are prized for their sensorial properties, but little information is available on potential nutritional benefits. By using a broad-based bioactivity screen, followed up with specific bio-activity assays, molecular components within mango fruits that have the potential to deliver nutritional health benefits will be identified. This information will be used both to provide information on the properties of current mango varieties and to develop breeding tools for enhancing nutritional properties in future varieties.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883881** Prof RG Gilbert; Dr MT Gaborieau; A/Prof ID Godwin

**Approved Project Title** **Graft copolymers from starch and synthetic monomers**

**2008 :** \$ 65,000

**2009 :** \$ 135,000

**2010 :** \$ 145,000

**2011 :** \$ 75,000

**Primary RFCD** 2505 MACROMOLECULAR CHEMISTRY

APA(I) Award(s): 1

APDI Dr MT Gaborieau

**Collaborating/Partner Organisation(s)**

BASF Australia

**Administering Organisation** The University of Queensland

### Project Summary

Polymer dispersions, manufactured as latexes in large quantities in Australia and elsewhere, have myriad applications, such as in adhesives, bitumen modifiers, paints and paper coatings. This project will create the enabling science to replace by starch the current synthetic products used to stop these dispersions from coagulating. This will create new uses for renewable resources and will reduce environmental insult by avoiding the leaching of biologically incompatible chemicals. By using starch from crops suited for Australia's arid climate, the new technology will reduce both our dependence on imported products and our greenhouse gas emissions.

**LP0883808** A/Prof ID Godwin; Prof CP Grof; Mr ND Muller

**Approved Project Title** **eSorghum as a bio-fuel feedstock for arid environments**

**2008 :** \$ 149,813

**2009 :** \$ 295,576

**2010 :** \$ 285,050

**2011 :** \$ 293,047

**2012 :** \$ 153,760

**Primary RFCD** 3002 CROP AND PASTURE PRODUCTION

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Pacific Seeds

**Administering Organisation** The University of Queensland

### Project Summary

Increasing fuel costs, finite resources and the need to develop more carbon neutral and cleaner fuels have created a need for renewable sources. Ethanol and future generation biofuels (butanol and more energy-rich alcohols) can be extracted from biomass sources. Sorghum is an ideal bioenergy feedstock in the hotter, drier areas of Northern Australia, where starch (grain), sugar and lignocellulose (stover) can be amassed in this water efficient plant. Identifying and manipulating the genes to enable the improvement of sorghum as a dedicated bioenergy crop, will enable the increased efficiency of the Australian biofuels industry and create sustainable rural industries.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883448** A/Prof PJ Halley; A/Prof BR Bhandari; Dr JA Cichero; A/Prof LC Ward; Dr TM Nicholson

**Approved Project Title** **A Novel Rheological and Chewing and Swallowing model for the Smart Design of Texture Modified Foods for Increased Aged Health**

**2008 :** \$ 65,000  
**2009 :** \$ 125,000  
**2010 :** \$ 120,000  
**2011 :** \$ 60,000

**Primary RFCD** 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**  
RSL Care

**Administering Organisation** The University of Queensland

### Project Summary

Difficulty in chewing and swallowing mean about 40% of elderly people require Texture Modified (TM) meals. Elders able to eat only very soft food textures have a 2.4 fold higher risk of mortality. However existing methods to assess the level of texture modification are poor; achieving a consistent level of TM meal is difficult; and TM meals have poor sensory properties (appearance, flavour, aroma). This work will use a novel chewing and swallowing model in conjunction with novel food flavour and property measurements to develop new texture modified foods with increased taste, ease of swallowing and nutritional value.

**LP0883380** A/Prof BD Hankamer; Dr PM Schenk; Dr UC Marx; Prof Dr CH Posten; Dr O Kruse

**Approved Project Title** **Second generation biofuels: developing environmentally friendly high-efficiency microalgae for biofuel production**

**2008 :** \$ 115,926  
**2009 :** \$ 228,124  
**2010 :** \$ 221,246  
**2011 :** \$ 109,048

**Primary RFCD** 2708 BIOTECHNOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
Pacific seeds  
Advanta India Limited

**Administering Organisation** The University of Queensland

### Project Summary

The development of CO<sub>2</sub>-neutral (biodiesel) and CO<sub>2</sub>-free (hydrogen) fuels is an urgent challenge facing our society to combat climate change and protect against oil price shocks. Successful outcomes from this project will bring this innovative technology closer to commercial reality. The solar-powered microalgal systems being developed, offer a number of national/community benefits including

1. A high-efficiency frontier-technology for clean fuel production for the Australian and international market
2. A new process to desalinate water
3. Frontier technology to sequester atmospheric CO<sub>2</sub>
4. Frontier technologies for wealth generation in drought- or salinity-affected and naturally arid regions

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883314** Dr DK Harrison; Prof DC Joyce; Dr KM Davies

**Approved Project Title** **Australian native plant species as models for understanding the regulation and roles of betalain pigment synthesis**

**2008 :** \$ 16,040

**2009 :** \$ 31,108

**2010 :** \$ 28,868

**2011 :** \$ 13,799

**Primary RFCD** 3003 HORTICULTURE

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Aussie Colours Pty Ltd

**Administering Organisation** The University of Queensland

### Project Summary

This project will have triple bottom line benefits. Economic: new cultivars developed from understanding betalains will sell worldwide, generating returns, incomes and employment in urban, peri-urban and rural Australia. Social: Novel Ptilotus and Calandrinia cultivars will adorn parks and gardens around Australia, thereby enhancing quality of life. Environmental: Ptilotus and Calandrinia are inherently drought resistant. Novel ornamental cultivars will have high water use efficiency and contribute to water conservation in urban Australia in the face of drought and global warming. Moreover, understanding their synthesis and roles could yield new strategies for enhancing stress tolerance in other species, including crop plants.

**LP0883403** A/Prof SM Mahler; Prof MT Smith; Dr BD Wyse; Dr TM Woodruff; Prof PM Curmi; Dr DJ Naylor; Dr RJ Brown

**Approved Project Title** **Development of chaperonin 10-based second generation biopharmaceuticals for treatment of inflammatory diseases.**

**2008 :** \$ 45,000

**2009 :** \$ 90,000

**2010 :** \$ 90,000

**2011 :** \$ 45,000

**Primary RFCD** 3202 IMMUNOLOGY

**Collaborating/Partner Organisation(s)**

C-Bio Ltd.

**Administering Organisation** The University of Queensland

### Project Summary

Diseases caused by malfunctioning of the body's immune system (inflammatory diseases) such as rheumatoid arthritis, psoriasis and Crohn's disease cause illness in all cultures and societies, and impose financial strain on health care providers. Current treatment relies on biopharmaceuticals that block inflammatory mediators in the body or with pharmaceuticals such as anti-inflammatory drugs; both these treatments may have serious side effects. Cpn10 suppresses the body's inflammatory response while maintaining immune function to combat infections. The project seeks to develop new, safe and effective biopharmaceuticals based on Cpn10 for the treatment of a variety of chronic inflammatory diseases and autoimmune disorders.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883689** Dr PA Meehan; Dr W Daniel; Dr S Ding

**Approved Project Title** **Optimal transitional surface for a new continuous press forming process**

**2008 :** \$ 35,000

**2009 :** \$ 70,000

**2010 :** \$ 70,000

**2011 :** \$ 35,000

**Primary RFCD** 2903 MANUFACTURING ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Australian Tube Mills Pty Ltd

**Administering Organisation** The University of Queensland

**Project Summary**

This project addresses the National Research Priority - Frontier Technologies for Building and Transforming Australian Industries through smart information use. This project aims to gain fundamental scientific understanding of a manufacturing process with the aim of developing a tool that will enhance existing manufacturing processes and controls from an 'art of expertise' to a scientific understanding and improvement. This manufacturing area represents a niche market for Australian manufacturing and the development of a product that enhances productivity and reduces costs has the potential to elevate Australian manufacturers in the export market and create economic benefit for Australia.

**LP0883675** Dr JF Mueller; Dr DW Hawker; Dr ME Bartkow; Dr K Booij; Dr SD Costanzo; Dr RK Symons; Mr AJ Watkinson; Dr BL Tan; Dr BI Escher

**Approved Project Title** **Development and calibration of aquatic passive sampler technologies for emerging water pollutants**

**2008 :** \$ 50,000

**2009 :** \$ 120,000

**2010 :** \$ 110,000

**2011 :** \$ 40,000

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Queensland Environmental Protection Agency

Great Barrier Reef Marine Park Authority

South Australian Environmental Protection Authority

Environmental Protection Authority, Victoria

Queensland Health Forensics and Scientific Services

National Measurement Institute

Brisbane Water

Department of Water, WA

SEQWater Corporation

NSW Dept of Environment & Climate Change

**Administering Organisation** The University of Queensland

**Project Summary**

Contaminated water is a key exposure source for many emerging pollutants either direct via consumption of water or indirect via consumption of aquatic biota. Monitoring of emerging aquatic pollutants remains a challenge. In this project we will develop cost effective monitoring technologies for emerging aquatic pollutants. The outcome will allow a more comprehensive and cost-effective monitoring of these pollutants and related to that a decrease in risk related to water pollution. Furthermore it will enhance consumer confidence, improve water management and allow more comprehensive identification of emerging risks related to aquatic pollutants.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883616** Prof HP Possingham; Dr KA Wilson

**Approved Project Title** **Spatial prioritization in the context of climate change and unforeseen opportunities: maximizing conservation outcomes in Gondwana Link**

**2008 :** \$ 53,058

**2009 :** \$ 107,367

**2010 :** \$ 108,617

**2011 :** \$ 108,617

**2012 :** \$ 54,308

**Primary RFCD** 3008 ENVIRONMENTAL SCIENCES

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

The Nature Conservancy

The Wilderness Society Inc

Greening Australia

**Administering Organisation** The University of Queensland

### **Project Summary**

The economic wealth of Australia is underpinned by its remarkable biological diversity. However, land and water degradation are eroding Australia's natural asset base and climate change is expected to magnify these impacts. Given limited funds for biodiversity conservation, we need to maximise the benefits of our investment in natural resource management. This research will deliver approaches and tools to ensure that we maximise the protection of biological diversity in the context of a changing world climate and a limited budget. We will share the results of our research with decision makers, scientists, and the general public.

**LP0883663** Dr AJ Richardson; Dr MA Burford; A/Prof K Yin; Prof HP Possingham; Dr D Rissik

**Approved Project Title** **Resilience of Moreton Bay to climate change: Links between nutrient inputs and plankton dynamics**

**2008 :** \$ 80,000

**2009 :** \$ 160,000

**2010 :** \$ 160,000

**2011 :** \$ 80,000

**Primary RFCD** 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 4

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

Healthy Waterways Partnership

Environmental Protection Agency

**Administering Organisation** The University of Queensland

### **Project Summary**

A healthy Moreton Bay, with its lucrative fishing, iconic turtles, dugongs and seabirds, helps support the \$9 billion per annum tourist industry in SE Queensland. Moreton Bay is under increasing threat from nutrients produced by a mushrooming coastal population and from climate change impacts. Here we investigate nutrient-plankton relationships and develop a simple model to evaluate future impacts on bay health. This project will put Australian scientists at the forefront of research focused on the adaptation of coastal marine environments to climate impacts, and ensure that Moreton Bay remains healthy now and into the future

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883530** Dr PT Scott; Prof PM Gresshoff

**Approved Project Title** **Genetic transformation of the biodiesel producing tree legume Pongamia pinnata**

**2008 :** \$ 22,500

**2009 :** \$ 60,000

**2010 :** \$ 70,000

**2011 :** \$ 82,500

**2012 :** \$ 92,500

**2013 :** \$ 42,500

**Primary RFCD** 2708 BIOTECHNOLOGY

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

Bioenergy Research Pty Ltd

**Administering Organisation** The University of Queensland

### **Project Summary**

In response to global climate change and the threat of declining reserves of fossil fuels, liquid fuels of the future are to be manufactured in greater proportion from sustainable biological resources. Pongamia, a native legume tree, has the potential to make a significantly positive impact on the emerging biofuels industry. As a legume Pongamia requires no nitrogen fertiliser, is not a food crop, and can grow well on marginal lands unlikely to be used for food crops. Improvement of Pongamia through the genetic tools developed in this project will provide an environmentally sustainable source of biodiesel long into the future.

**LP0883839** Dr JG Tichon; Dr GM Wallis; Dr MS Horswill

**Approved Project Title** **Improving Efficiency and Safe Workplace Operations in Heavy Industry: Training Problem Solving and Decision Making through Immersive Simulation**

**2008 :** \$ 60,000

**2009 :** \$ 130,000

**2010 :** \$ 120,000

**2011 :** \$ 90,000

**2012 :** \$ 90,000

**2013 :** \$ 50,000

**Primary RFCD** 3803 COGNITIVE SCIENCE

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

The Construction Training Centre

**Administering Organisation** The University of Queensland

### **Project Summary**

Civil construction is critical to Australia's economic growth. Currently the industry suffers from significant accident rates and severe labor shortages. Simulators offer a means to tackle both issues by accelerating training and familiarizing staff with unsafe, hazardous situations. This project will test and refine training programs to ensure they are both valid and effective. Results will maximize quality of simulator-based training for heavy industry and contribute to safer workplace practices on high risk work sites. Training innovations in heavy industry are essential to keep Australia's competitive edge in the domestic labor market and Asia-Pacific region.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883837** Dr DJ Trott; Prof MR McGowan; Prof M Bellgard; Dr AE Lew

**Approved Project Title** **An integrated genomics approach to improve our understanding of the biology of genital campylobacteriosis in beef cattle**

**2008 :** \$ 75,000

**2009 :** \$ 145,716

**2010 :** \$ 130,000

**2011 :** \$ 59,284

**Primary RFCD** 3005 VETERINARY SCIENCES

APA(I) Award(s): 1

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

QLD Department of Primary Industries & Fisheries

Pfizer Australia

Gribbles Veterinary Pathology

**Administering Organisation** The University of Queensland

### **Project Summary**

Beef is Australia's most valuable agricultural export estimated at \$9.6B annually and this industry accounts for one-third of full time employment in regional communities. Currently, unknown causes of reproductive losses in cattle in Northern Australian cost producers approximately \$15M per annum. Bovine genital campylobacteriosis is one of the major risk factors associated with this high cost due to the inability to accurately diagnose the disease. This research will integrate genomics and bioinformatics with infection and vaccination models to improve our understanding of the biology of the disease to develop appropriate control strategies securing Australia's beef industry.

**LP0884013** Prof JE Wilson; Dr OR Wright; Prof DG Hegney; Dr EC Ward

**Approved Project Title** **Food services in residential aged care: Financial, personnel, and service delivery factors**

**2008 :** \$ 28,126

**2009 :** \$ 59,720

**2010 :** \$ 57,243

**2011 :** \$ 25,649

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

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

Blue Care Head Office

TriCare

**Administering Organisation** The University of Queensland

### **Project Summary**

Evaluating current services to identify systems that deliver satisfying, effective, high quality care to vulnerable older Australians in aged care facilities (ACFs) is of national significance. If residents are more satisfied with their meals, their nutritional status will either improve or stabilise, reducing their risk of malnutrition-related morbidity and mortality and the associated financial burden to health care services. The cost of residential aged care is significant and growing and is subject to increased monitoring and concern. This project will suggest refinements of the Aged Care Accreditation Standards to improve their applicability to ACF residents and appropriateness for evaluating resident-focused nutritional care.

**South Australia**

**The Flinders University of South Australia**

**LP0883495** Prof CM Bull; Dr MN Hutchinson

**Approved Project Title** **Translocation as a Conservation Strategy for the Pygmy Bluetongue Lizard**

**2008 :** \$ 40,000

**2009 :** \$ 75,000

**2010 :** \$ 67,500

**2011 :** \$ 32,500

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Zoos SA

SA Dept of Environment and Heritage, Botanic Gardens of Adelaide

Field Naturalists Society of SA

South Australian Museum

Northern and Yorke NRM Board

SA Murray-Darling NRM Board

**Administering Organisation** The Flinders University of South Australia

**Project Summary**

This project contributes to the body of research guiding efforts to conserve the biodiversity of Australia. It will benefit the broader scientific community by advancing knowledge of the dynamics of endangered species, and the role of recruits to the population. It has particular potential benefits for the local conservation activities of the community of the Burra area, by informing landholders of best conservation practices and by providing a firm basis for actions by the pygmy bluetongue recovery program

**The University of Adelaide**

**LP0883746** Dr AA Johnson; Prof MA Tester; A/Prof JC Stangoulis

**Approved Project Title** **Cell type-specific transgene expression to increase Fe content in cereal grains**

**2008 :** \$ 19,500

**2009 :** \$ 42,500

**2010 :** \$ 23,000

**Primary RFCD** 3002 CROP AND PASTURE PRODUCTION

**Collaborating/Partner Organisation(s)**

HarvestPlus Challenge Program

**Administering Organisation** The University of Adelaide

**Project Summary**

The grains industry forms a vital part of the Australian economy and farm sector. Increased iron concentrations of wheat and other cereal grains would greatly increase their nutritional value for people worldwide, thereby increasing their market value and profitability for farmers. High iron wheat would also lower the production costs of many Australian wheat products by reducing or eliminating the need for iron fortification of wheat flour. High iron cereals promote healthy development of young Australians and can improve preventative healthcare by reducing the incidence of iron deficiency anaemia and biochemical deficiency.

**LP0883930** A/Prof JD Karnon; Prof J Beilby; Ms CH Holton; Mr PH Hakendorf; Prof DI Ben-Tovim; Prof P Ryan; A/Prof SD Eckermann; Prof MG Sawyer; Dr NP Roos; Mr AL Woollacott; Mr DM Banham; Dr R Pegram; Ms S Thompson; Mr AG Elshaug

**Approved Project Title** **Evaluating the long-term costs and benefits of community-based initiatives**

**2008 :** \$ 50,000

**2009 :** \$ 100,000

**2010 :** \$ 100,000

**2011 :** \$ 50,000

**Primary RFCD** 2301 MATHEMATICS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Department of Health SA

Department of Education and Children's Services

Central Northern Adelaide Health Service

**Administering Organisation** The University of Adelaide

**Project Summary**

The ultimate benefit from the research is a more efficient allocation of public funds to provide public services, i.e. an increase in the gain derived from the government budget. The relative advantages of alternative methods of delivering government services are subject to significant uncertainty, which means that policy decisions are often poorly informed. Improvements in the accuracy of predicting the costs and benefits of complex community-based initiatives will help policymakers identify the set of initiatives that provide the best outcomes for the community they serve, as well as informing the optimal specification of the individual initiatives.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883453** Dr DJ Walker; Dr J Davis

**Approved Project Title** **Sediment capture and deposition processes in coastal lagoons**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Murray Darling Basin Commission

**Administering Organisation** The University of Adelaide

### Project Summary

Intermittently closed and open lagoons and lakes are an increasing problem for coastal managers around Australia: they can limit fish migration, and lead to degraded water quality and an increased risk of flooding. The Murray mouth, for example, closed in 1981 and still exists in a congested state. Closure would have disastrous consequences for the area in general and the Coorong in particular, with significant damage to Australia's environmental reputation. An optimised dredging operation at the mouth (currently costing \$4.6 m annually), together with better management of river discharges, will have the potential to improve conditions in the area.

**LP0883451** Dr C Wu; Prof DJ Oehlers; Dr N Burman; Dr M Rebenrost; Prof AS Whittaker

**Approved Project Title** **Blast resistance of flexural ultra-high performance concrete members**

**2008 :** \$ 25,627

**2009 :** \$ 51,254

**2010 :** \$ 51,254

**2011 :** \$ 25,627

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

VSL Australia

**Administering Organisation** The University of Adelaide

### Project Summary

Ultra high performance concrete (UHPC) has high material strengths, high material deformation and high toughness, making it an ideal material for resisting blast effects. Since there are great differences between the mechanical properties of UHPC and conventional concrete, traditional guidelines need to be significantly adapted to accommodate UHPC. This project will facilitate the development of design procedures for reinforced UHPC members. It will enable design engineers to take advantage of the desirable properties of UHPC for anti-terrorism. The application of this project will lead to saving lives, reducing the extent of injury and minimizing social and economic disruption.

**University of South Australia**

**LP0884005** Dr JW Boland; Prof GI Metternicht; Prof JA Filar; Dr T Wigley

**Approved Project Title** **Unlocking the Grid: the future of the electricity distribution network**

**2008 :** \$ 35,000  
**2009 :** \$ 60,000  
**2010 :** \$ 45,000  
**2011 :** \$ 20,000

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Electricity Supply Industry Planning Council

**Administering Organisation** University of South Australia

**Project Summary**

This project applies to the National Research Priority of an environmentally sustainable Australia. A critical challenge for the development of power systems will be to transform them from their current dependence on conventional centralised generation to a situation where more diversified, more volatile and less controllable generation sources contribute a significant percentage of the energy. Coupled with this is a change in demand patterns due to both demographic and socio-economic variables as well as climate change. Careful analysis is required in the design of the future grid architecture to ensure the security of supply.

**LP0883400** Prof DA Brooks; Dr EJ Parkinson-Lawrence; Dr R Kakavanos-Plew; A/Prof J Gecz; Dr M Corbett

**Approved Project Title** **Development of a gene delivery system to access neuronal cells**

**2008 :** \$ 45,000  
**2009 :** \$ 87,500  
**2010 :** \$ 85,000  
**2011 :** \$ 42,500

**Primary RFCD** 2708 BIOTECHNOLOGY

APDI Dr R Kakavanos-Plew

**Collaborating/Partner Organisation(s)**

Women's and Children's Hospital

Neubody Pty Ltd

**Administering Organisation** University of South Australia

**Project Summary**

Understanding the pathways for gene delivery and efficient expression will result in new knowledge in the areas of biotechnology and cell biology. This project will result in significant new information on vesicular trafficking pathways in neurons. An effective gene delivery system will realise significant commercial potential for our partner organisations and economic benefit to other Australian industry. This project aligns directly with the National Research Priority of "Promoting and maintaining good health" with a specific benefit for patients that suffer mental and physical degeneration and for their families.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883949** Dr J Dollman; Dr K Ball; Prof TS Olds; Dr MJ Drummond; Dr AM Magarey; Dr N Sinn; Mr J Smith; Ms TK Gill; Ms L Jarman

**Approved Project Title** **Exploring resilience in relation to physical activity and dietary behaviours among children from neighbourhoods of low socioeconomic position**

**2008 :** \$ 20,000  
**2009 :** \$ 30,000  
**2010 :** \$ 20,000  
**2011 :** \$ 10,000

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

**Collaborating/Partner Organisation(s)**

Department of Health

**Administering Organisation** University of South Australia

**Project Summary**

The link between social disadvantage and poor health, across a broad age range, is a serious public health challenge. Current interventions to promote healthy weight-related behaviours among young people ignore the motivators and barriers unique to demographic sub-groups, and are largely ineffective. The personal and socio-environmental correlates of healthy behaviours among young South Australians identified in this study are likely to be relevant to low socioeconomic neighbourhoods in other states and territories. As such, this study will offer new insights into intervention design that will give impetus to the efforts of researchers, policy makers and practitioners throughout Australia.

**LP0883872** A/Prof D Fornasiero; Prof CJ Moran; Prof J Ralston

**Approved Project Title** **Impact of recycled and low quality process water on sustainable mineral processing practices**

**2008 :** \$ 45,000  
**2009 :** \$ 90,000  
**2010 :** \$ 90,000  
**2011 :** \$ 45,000

**Primary RFCD** 2907 RESOURCES ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

AMIRA International Limited

**Administering Organisation** University of South Australia

**Project Summary**

Water is in short supply and needs to be considered as a 'key reagent'. The quality of this reagent can vary widely. For a sustainable mineral processing practice, the use of recycled or low quality/saline process water will be essential for a plant to operate in the future. The major benefit is recognition that significant recycle of process water for flotation is achievable if simple water quality control and management practices are implemented. In addition, a better understanding and control of water quality in recycled/saline process water may lead to improved flotation stability and performance, and reduced reagent consumption.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883672** Prof B Johnson; Prof B Down; Dr R Le Cornu; Dr JH Peters; Dr AM Sullivan; Dr JM Pearce; Ms J Hunter  
**Approved Project Title** **Addressing the teacher exodus: Enhancing early career teacher resilience and retention in changing times**  
**2008 :** \$ 10,000  
**2009 :** \$ 35,000  
**2010 :** \$ 50,000  
**2011 :** \$ 35,000  
**2012 :** \$ 10,000  
**Primary RFCD** 3301 EDUCATION STUDIES

### Collaborating/Partner Organisation(s)

Department of Education and Training  
Australian Education Union South Australian Branch  
State School Teachers Union of Western Australia  
Association of Independent Schools of South Australia  
Association of Independent Schools of Western Australia  
Catholic Education Office of Western Australia

**Administering Organisation** University of South Australia

### Project Summary

This research will produce new knowledge, strategies, models and recommendations that will help to keep early career teachers in the profession in regional, rural and remote areas. In doing so it will address the problem of teacher shortage that is currently threatening the nation's educational, economic and social outcomes. The research outcomes will have particular credibility at the national level because they will be the result of dialogue and collaboration across three universities and six industry partners who are the key stakeholders in teacher employment in two states. In addition, the collaborative approach will facilitate implementation of recommendations at the local, state and national levels.

**LP0883493** Dr JE Kellett; Ms KM Davidson; Dr DA Ness; Dr LJ Wilson; Dr A Sivam; Dr S Karuppanan; Mr S Pullen; Dr PM Tisato  
**Approved Project Title** **An integrated model for the assessment of urban sustainability**  
**2008 :** \$ 41,167  
**2009 :** \$ 80,491  
**2010 :** \$ 78,648  
**2011 :** \$ 39,324  
**Primary RFCD** 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APDI Ms KM Davidson

### Collaborating/Partner Organisation(s)

Department for Families and Communities  
Planning SA  
Department of Transport, Energy and Infrastructure  
City of Onkaparinga

**Administering Organisation** University of South Australia

### Project Summary

The redevelopment and improvement of outdated urban infrastructure and the establishment of new infrastructure to meet needs of a growing population and increased services is a challenge faced by urban planners and developers in most Australian cities. This research will develop a systems-based framework within which combinations of models and tools will be evaluated for inclusion in an integrated assessment tool. The tool will enable us to address urban growth and its inter-relationship with infrastructure systems and services, including transport, energy, water, affordable housing, education and other land-use issues in relation to a case study of urban development.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883701** Prof C Kulik; Dr MI Metz

**Approved Project Title** **Managing Diversity: Diversity Practice Configurations and Organisational Effectiveness**

**2008 :** \$ 20,994  
**2009 :** \$ 43,433  
**2010 :** \$ 43,185  
**2011 :** \$ 20,745

**Primary RFCD** 3502 BUSINESS AND MANAGEMENT

**Collaborating/Partner Organisation(s)**

Diversity@Work Pty Ltd  
 Australian Senior Human Resources Roundtable  
**Administering Organisation** University of South Australia

**Project Summary**

Organisations expend a lot of money on their diversity efforts but often fail to implement the most effective diversity management practices. Left unmanaged, workforce diversity can create internal conflict and lower organisational performance. These challenges are especially difficult for the small organisations characteristic of Australian business. This project is designed to identify the most effective diversity management practices for small and large organisations and provide recommendations for their use. The project benefits employers and employees alike by identifying diversity management practices that maximise organisational effectiveness and create positive working environments in the Australian context.

**LP0883743** Prof L Segal; Prof DA Scott; A/Prof PH Delfabbro; A/Prof J Ratcliffe; Ms N Rogers; Ms G Mondy; Ms S Thompson; Dr TG Donald

**Approved Project Title** **Priority Setting in Child Protection: developing an evidence-based strategy to reduce child abuse and neglect and associated harms.**

**2008 :** \$ 74,314  
**2009 :** \$ 158,877  
**2010 :** \$ 169,560  
**2011 :** \$ 122,497  
**2012 :** \$ 37,500

**Primary RFCD** 3402 APPLIED ECONOMICS

**Collaborating/Partner Organisation(s)**

Social Inclusion Unit, Department of the Premier and Cabinet  
 Children, Youth and Women's Health Service  
 Department of Families and Communities  
 Department of Education and Children's Services  
 South Australian Department of Health  
**Administering Organisation** University of South Australia

**Project Summary**

Persons who are potential, current or previous victims of child abuse and neglect are the primary beneficiaries of this research. The study will facilitate evidence-based funding decisions by government (and nongovernment organizations) integrating data on quality of life impacts (physical/mental health, educational, social etc), and the costs to society of dealing with the consequences of child abuse. The research has the potential to profoundly enhance the well-being of Australia's most vulnerable children, simultaneously addressing the large costs on agencies of dealing with child abuse. The methodology will be highly applicable to other complex social problems requiring whole of government strategies.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883955** Prof L Segal; Prof RA McDermott; Dr RA Boyce; Ms JM Hoiles; Prof EJ May; Mr JD Glover; Ms BM Gaughwin; Ms DS Law; Ms C Turnbull

**Approved Project Title** **Development and implementation of an evidence-based primary health care workforce planning model to support best practice chronic disease management**

**2008 :** \$ 50,629  
**2009 :** \$ 101,259  
**2010 :** \$ 99,844  
**2011 :** \$ 49,214

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

**Collaborating/Partner Organisation(s)**

South Australian Department of Health

**Administering Organisation** University of South Australia

**Project Summary**

The workforce model will inform government health workforce and health services planning, with the promise of improving access to best practice care for persons with diabetes, and potentially other chronic conditions, that represent the dominant Australian health burden. It also will inform education and training of health professionals and support a more flexible response to health workforce needs. Given projected health work force shortages, flexibility in responding to health care needs will be crucial to maintaining health system capacity. The model supports system level change that will enable improved population health outcomes, reduce preventable hospital admissions and deliver production gains

**LP0884158** Prof MA Taylor; Prof S Hamnett; Mr AE Rix

**Approved Project Title** **The potential role of transit-oriented development in Australian cities: a critical assessment using a suburban rail corridor**

**2008 :** \$ 56,482  
**2009 :** \$ 127,240  
**2010 :** \$ 129,932  
**2011 :** \$ 59,174

**Primary RFCD** 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Land Management Corporation

City of Salisbury

Department for Transport, Energy and Infrastructure

Town of Gawler

City of Playford

**Administering Organisation** University of South Australia

**Project Summary**

Sustainability in urban development and a reduction in our dependence on the private car for mobility are key concerns in Australia and elsewhere. The results of this research will inform and lead world's best practice in the evaluation and adoption of sustainable transport solutions, especially those related to investment in urban public transport systems, and hence provide options for planners and developers to minimise the impacts of developments on the environment. The benefits from the project will be in improved planning and design principles and planning tools for transit-oriented urban developments in both inner and outer suburbs in Australian cities.

**Western Australia**

**Curtin University of Technology**

**LP0883460** A/Prof SM Aoun; A/Prof MC Oldham; Prof LJ Kristjanson

**Approved Project Title** **To implement and evaluate flexible models of palliative care service delivery for terminally ill people living alone at home.**

**2008 :** \$ 26,976

**2009 :** \$ 53,130

**2010 :** \$ 26,154

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

**Collaborating/Partner Organisation(s)**

Silver Chain Hospice Care Service

**Administering Organisation** Curtin University of Technology

**Project Summary**

Provision of evaluated services for this growing population group will lead to better planning and implementation of care being delivered at home, improved quality of life, increased capacity to die at home, and a reduction in hospitalisations and other health care costs.

**LP0884027** Dr RL Mancera; A/Prof GJ Bryant; Prof AE Mark; Dr SR Turner; Dr P Che; Dr E Bunn

**Approved Project Title** **Development of cryopreservation for high value provenance collections of recalcitrant plant species used in post-mining restoration**

**2008 :** \$ 75,000

**2009 :** \$ 150,000

**2010 :** \$ 150,000

**2011 :** \$ 75,000

**Primary RFCD** 2499 OTHER PHYSICAL SCIENCES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Alcoa World Alumina Australia

Worsley Alumina Pty Ltd

Botanic Gardens and Parks Authority

**Administering Organisation** Curtin University of Technology

**Project Summary**

This project will develop new and innovative ways to store highly valued native plant germplasm at ultra cold temperatures (-196 °C, in liquid nitrogen) as a means to ensure that elite genotypes used in minesite restoration and critically endangered species are not lost forever to extinction. This project will be the first of its type in Australia utilising a multidisciplinary approach to answer key storage questions and will provide significant national benefits to conservation programs and landcare groups, providing these with additional resources to ensure the long-term survival of native plant germplasm collections.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883877** Dr BJ Mullins; Mr W Heikamp; Prof G Kasper

**Approved Project Title** **Increasing the operational lifetime and optimising the design of crankcase oil-mist filters**

**2008 :** \$ 40,000

**2009 :** \$ 60,000

**2010 :** \$ 40,000

**2011 :** \$ 20,000

**Primary RFCD** 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

MANN+HUMMEL GmbH

**Administering Organisation** Curtin University of Technology

### Project Summary

Australia is one of the largest (per capita) users worldwide of heavy diesel engines, within sectors such as transport, mining, construction, shipping and power generation (usage of many of the above is concentrated in regional communities e.g. mining). This work will minimise emissions from such industries, as well as reduce lubricant oil usage - thereby maximising waste oil recovery and reuse (approx 5500 tonnes p.a.). Oil mists can be regarded as volatile organic compounds (VOCs) for the purposes of CO<sub>2</sub> equivalent emissions, so therefore, the efficient capture of oil mists will reduce carbon emissions from the above industries in Australia.

**LP0883956** Dr B Rasmussen; Dr B Krapez; Prof A Bekker

**Approved Project Title** **Tectonothermal and mineralization history of banded iron formations of the north Pilbara Craton**

**2008 :** \$ 82,500

**2009 :** \$ 162,500

**2010 :** \$ 80,000

**Primary RFCD** 2601 GEOLOGY

**Collaborating/Partner Organisation(s)**

BHP Billiton Iron Ore Pty Ltd

**Administering Organisation** Curtin University of Technology

### Project Summary

Iron ore is Australia's largest single export commodity, accounting for 8% (\$12.8 billion) of total merchandise exports in 2006. Most of that value comes from the Pilbara region of Australia. Discovery rates of new deposits have declined over the past two decades, while many mines are nearing the end of production. Exploration expenditure has also declined. There is therefore an urgent need to reinvigorate exploration to maintain an industry that underpins much of Australia's regional wealth. Outcomes of the project will provide exploration with improved geological tools with which to develop superior exploration models and thereby better direct exploration strategies.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883347** Prof S Venkatesh; Dr MM Lazarescu; Dr T Tan; Dr D Pham; Dr W Liu

**Approved Project Title** **Intelligent Security in Urban Spaces**

**2008 :** \$ 65,000

**2009 :** \$ 120,000

**2010 :** \$ 105,000

**2011 :** \$ 50,000

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

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

DTI Group Ltd

Western Australia Police

Public Transport Authority

**Administering Organisation** Curtin University of Technology

### **Project Summary**

Successful completion of this work will contribute greatly to Safeguarding Australia, Priority Area 4, and lead to further commercial exploitation on the national and international stages. In particular, we are responding to increasing demand from our partners for sophisticated surveillance systems for infrastructure and public transport. The adoption of these technologies by DTI, with international contracts for video surveillance, positions Australia to gain the leading edge in this niche industry. Additionally we deliver solutions to our end user partners, PTA and WA Police, to facilitate enhanced community security. We will also build research capacity for surveillance technologies through advanced training of research staff.

**LP0883359** Prof S Venkatesh; Dr DQ Phung; Dr BD Adams; Prof GA West; Prof TL Packer

**Approved Project Title** **Smart technologies for people with vision impairment and blindness**

**2008 :** \$ 78,197

**2009 :** \$ 158,740

**2010 :** \$ 163,502

**2011 :** \$ 82,959

**Primary RFCD** 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

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

Lions Eye Institute Limited

Association for the Blind of WA

**Administering Organisation** Curtin University of Technology

### **Project Summary**

Our technological solutions for early detection of disease provide the best opportunity for effective treatment, and provision of strategies capable of assisting individuals. It aims to empower primary care providers and will lead to more effective screening methods and improved efficiencies in redirecting resources towards those whose eye disease is treatable. It will further improve and enable access to specialist eye care for those living in rural, regional and remote locations. The assistive technologies for the blind will greatly enhance the quality of life of the visually impaired, enhancing their quality of life and removing several risk factors. The net annual savings to the Government from these projects would be considerable.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### Edith Cowan University

**LP0883936** Dr AL Hinwood; Prof J Odland; Dr J Heyworth; Dr RK Symons; Prof N de Klerk

**Approved Project Title** **Assessing maternal exposure to persistent toxic substances and risk of adverse birth outcomes.**

**2008 :** \$ 19,386

**2009 :** \$ 44,646

**2010 :** \$ 38,074

**2011 :** \$ 12,813

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

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

Arctic Assessment and Monitoring Program

**Administering Organisation** Edith Cowan University

#### **Project Summary**

There are numerous sources of persistent toxic substances (PTS) and due to their long half life in the environment they can increase in concentration over time, increasing the risks of human exposure. Australia is a signatory to the Stockholm Convention and this project both assists in the meeting Australia's obligations but also addresses the important subject of the relationship between environment, health and risk. The study will be the first of its type to systematically measure maternal exposure and link the risk of adverse birth outcomes. It will significantly improve our ability to assess the impact of chemicals on health. It will also provide benchmark information for a use in national standard setting and policy development.

**Murdoch University**

**LP0883556** Dr PS Solomon; Prof RP Oliver; Dr RJ Lipscombe

**Approved Project Title** **Proteome mapping of the model fungal plant pathogen Stagonospora nodorum using LC-LC-MS/MS**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Proteomics International

**Administering Organisation** Murdoch University

**Project Summary**

Stagonospora nodorum is a fungus that causes leaf and glume blotch disease on wheat. This disease alone causes \$55 million dollars in yield losses per annum in Australia. This project aims to identify the proteins produced by Stagonospora nodorum through the development of a new proteomics technique. Two clear benefits to the community resulting from this project will emerge. The first will be the expert training of a student in proteomics, a skill that is keenly sought. Secondly, the identification of these pathogen proteins will lead to new strategies to better control the disease and secure the supply of wheat.

**The University of Western Australia**

**LP0883812** Prof PA Cawood; Prof K Grice; Mr R Hocking; Prof JL Kirschvink; Dr P Montgomery; Dr PE Playford; Mr T Playton; Mr N Thompson; Dr JA Trotter; Prof P Ward

**Approved Project Title** **Chronostratigraphic Framework for the Devonian Canning Basin - A Multidisciplinary Record of Environmental Change**

**2008 :** \$ 60,000  
**2009 :** \$ 162,500  
**2010 :** \$ 230,000  
**2011 :** \$ 127,500

**Primary RFCD** 2602 GEOPHYSICS

**Collaborating/Partner Organisation(s)**

Chevron Australasia Pty Ltd  
 ARC Energy  
 Geological Survey of Western Australia  
 MERIWA

**Administering Organisation** The University of Western Australia

**Project Summary**

Our detailed chronostratigraphic framework for Canning Basin and the biomarker data on source rock history provides an increased understanding of the resource potential of the basin and similar settings worldwide. Furthermore this high-fidelity data will be used by companies to develop the 'next' generation of hydrocarbon industry modelling workflows. Our research program also has important environmental implications; providing insight into drivers for Devonian mass extinctions and as periods of past biotic crises become increasingly understood they can provide critical insights into determining the thresholds of environmental change, which may potentially serve as analogues for present-day global climate change scenarios.

**LP0883292** A/Prof JG Hartnett; Prof SJ Tingay; Mr JH Searls; A/Prof EN Ivanov; Prof ME Tobar; Dr GI Moore; Dr A Tzioumis

**Approved Project Title** **Application of ultra-high stability cryogenic sapphire oscillators to Very Long Baseline Interferometry**

**2008 :** \$ 62,500  
**2009 :** \$ 107,500  
**2010 :** \$ 97,500  
**2011 :** \$ 52,500

**Primary RFCD** 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Poseidon Scientific Instruments

**Administering Organisation** The University of Western Australia

**Project Summary**

This project will develop a state-of-the-art commercial prototype of the cryogenic sapphire oscillator (CSO) optimised for use at remote sites. Proof of operation will be applied to the important niche market of Very-Long Baseline Interferometry (VLBI) radio astronomy, with improvements in image quality. The research will also significantly benefit the Australian bid for the SKA project, as the CSO is the only technology capable of synchronising the outputs of the telescopes arrays to the required signal to noise to attain the required image quality. The project will further Australia's status in radio astronomy as a world leader and add to our exports of precision scientific instruments.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883902** Dr TR Martin; Dr RJ Lipscombe

**Approved Project Title** **Wheat biomarkers - the effect of nitrogen withdrawal on the proteome and peptidome**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 3002 CROP AND PASTURE PRODUCTION

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Proteomics International P/L

**Administering Organisation** The University of Western Australia

### Project Summary

Nitrogen is a crucial macroelement for plants. Its importance is highlighted by the wide use of agricultural nitrogen fertilizers in Australia and world wide. This comes at substantial costs for the environment and the economy, due to low nitrogen use efficiency of cereals and environmental impacts. By understanding plant responses to nitrogen we can improve nitrogen efficiency. This project will identify proteins and peptides as biomarkers of plant responses to nitrogen withdrawal. Such biomarkers can be used in plant breeding and in agricultural prediction of plant nitrogen requirements with the potential to reduce agricultural costs and environmental impacts.

**LP0883914** Prof CL Raston; Dr KL Swaminatha-Iyer; Dr L Lim; Dr B Bosch

**Approved Project Title** **Targeted process development for drug delivery**

**2008 :** \$ 51,383

**2009 :** \$ 99,270

**2010 :** \$ 97,299

**2011 :** \$ 49,412

**Primary RFCD** 2918 INTERDISCIPLINARY ENGINEERING

**Collaborating/Partner Organisation(s)**

iCeutica, Inc.

**Administering Organisation** The University of Western Australia

### Project Summary

Matrix assisted ball milling and continuous flow process intensification on rotating surfaces in the form of spinning discs and rotating tubes, and combinations of these, allow the fabrication of nanoparticles for the pharmaceutical industry, with the ability to fine tune the properties of the particles to improve their uptake profiles, while minimising side effects. The research will be conducted through the Centre for Strategic Nano-Fabrication with its science based attention to quality by design for product development at the inception of the science. This, coupled with the involvement of iCeutica which has a strong commercially focused R and D profile, provides a more innovative research culture, and excellent research training.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884103** Dr AW Rate; Dr NW Radford

**Approved Project Title** **Evaluating a biogeochemical mechanism for soil anomaly formation using diffusive thin-film samplers in geochemical exploration**

**2008 :** \$ 12,813

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2603 GEOCHEMISTRY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Newmont Mining Corporation

**Administering Organisation** The University of Western Australia

**Project Summary**

We expect to develop new and effective technology for geochemical exploration for gold and base metals. This technology will take the form of: (i) increased understanding of, and a new conceptual model for, biogeochemical formation of soil geochemical anomalies in transported overburden; (ii) new chemical analysis techniques for soils and groundwater in mineralised areas. Improved models for anomaly formation will provide a clearer frame work for exploration in terrain under transported cover. New methodology has the potential to enhance anomaly detection for buried mineralisation, especially if the anomaly has formed biogeochemically.

**LP0883979** Prof Z Rengel; Dr KA Meney

**Approved Project Title** **Optimising biodegradation and removal of organic and inorganic pollutants in wastewater using constructed wetlands**

**2008 :** \$ 40,000

**2009 :** \$ 77,500

**2010 :** \$ 75,000

**2011 :** \$ 37,500

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

**Collaborating/Partner Organisation(s)**

Syrinx Environmental Pty Ltd

Australian Laboratory Services Pty Ltd

King Island Council

Department of Water

**Administering Organisation** The University of Western Australia

**Project Summary**

The urgency of water recycling is dictated by drying climate and rapid expansion of population in Australia. Constructed wetlands are environmentally-benign way to purify wastewater by removing inorganics and facilitating biodegradation of organic pollutants, thus producing recycled water that can be used in a variety of fit-for-purpose applications. This project will produce a decision-support system for optimising wetland performance in removing inorganics and biodegrading organic pollutants from wastewater, thus enhancing water recycling and reuse in this drying continent of ours.

**Tasmania**

**University of Tasmania**

**LP0883540** Prof MR Davis; Dr GA Thomas; Mr TJ Roberts; Mr NS Wells; Dr DS Holloway

**Approved Project Title** **Wave slam on high speed wave piercing catamaran ferries in large seas**

**2008 :** \$ 50,000  
**2009 :** \$ 100,000  
**2010 :** \$ 95,000  
**2011 :** \$ 45,000

**Primary RFCD** 2912 MARITIME ENGINEERING

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

INCAT Tasmania Pty Ltd  
 Revolution Design Pty Ltd

**Administering Organisation** University of Tasmania

**Project Summary**

Australia has taken a pioneering lead in the design of high speed multi-hull ferries and continues to extend their speed, range and payload performance. Design leadership and the technology which supports it are crucial to maintaining the existing large share of the international market for such vessels. Recently freight and military transport vessels have been exposed to much more severe wave conditions than passenger vessels and this has increased the need for improved prediction of structural loads due to waves. This project directly addresses that need by computation and model testing validation. The industry is a significant export earner and employer within Australia and so the project directly underpins those national benefits.

**LP0884030** Prof PR Haddad; Dr GW Dicoski; Dr JP Hutchinson; Dr R Szucs

**Approved Project Title** **Non-discriminatory, universal and sensitive detection technologies for fluid based separation techniques in the pharmaceutical industry**

**2008 :** \$ 85,000  
**2009 :** \$ 137,137  
**2010 :** \$ 107,137  
**2011 :** \$ 55,000

**Primary RFCD** 2504 ANALYTICAL CHEMISTRY

APA(I) Award(s): 1

APDI Dr JP Hutchinson

**Collaborating/Partner Organisation(s)**

Pfizer Australia

**Administering Organisation** University of Tasmania

**Project Summary**

The proposed research is focused on the specific needs of Australian and global pharmaceutical industries, and addresses a problem which is becoming increasingly significant with new classes of pharmaceuticals. Successful achievement of the goals of the project will result in major savings of cost and time during drug development and will lead to the production of safer drugs. The project will expand collaboration between Australia researchers and the world's largest pharmaceutical company. Specialised training will be provided to both postdoctoral and postgraduate researchers, positioning them to make strong contributions to Australia's growing pharmaceutical industry.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883880** A/Prof BF Nowak; Dr J Carson; Prof B Koop

**Approved Project Title** **Improving vaccine performance through understanding host-pathogen interaction in yersiniosis**

**2008 :** \$ 72,441

**2009 :** \$ 123,368

**2010 :** \$ 91,921

**2011 :** \$ 40,994

**Primary RFCD** 3007 FISHERIES SCIENCES

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

Tasmanian Salmonoid Growers Association

Ridley Aqua-Feed

**Administering Organisation** University of Tasmania

### **Project Summary**

This project will significantly contribute to the economic and environmental sustainability of the Australian salmon industry. It will reduce salmon production costs, ensure sufficient supply of fish from hatchery to grow-out and reduce the use of antibiotics. Reduced use of antibiotics will benefit both the environment and human health. As the salmon industry is based in regional and rural areas, this project will support rural and regional communities. This project will further strengthen Australian leadership in aquaculture research through use of molecular methods to address industry issues and will therefore increase the competitiveness of Australian science.

**LP0884001** Prof BM Potts; A/Prof RE Vaillancourt; Dr GW Dutkowski; Dr RJ Kerr

**Approved Project Title** **Quantitative genetics of Eucalyptus globulus**

**2008 :** \$ 52,500

**2009 :** \$ 105,000

**2010 :** \$ 105,000

**2011 :** \$ 52,500

**Primary RFCD** 2702 GENETICS

APA(I) Award(s): 1

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

Southern Tree Breeding Association

seedEnergy Pty Ltd

PlantPlan Genetics Pty Ltd

**Administering Organisation** University of Tasmania

### **Project Summary**

Eucalypt plantations in Australia have expanded rapidly over the last decade. With increasing market competition from overseas plantations for both pulp and solid wood products, Australia must maintain a competitive edge through efficiencies in production and product quality. Breeding and deployment of genetically superior planting stock is part of the solution. With global climate change and requirements for re-forestation in drier zones, there is an increasing requirement to genetically improve drought tolerance. This project will provide genetic information and strategies to back Eucalyptus globulus breeding and deployment programs for traditional as well as drier environments.

**Australian Capital Territory**

**The Australian National University**

**LP0883456** Prof RW Boswell; Dr C Charles

**Approved Project Title** **Space development of the HDLT Australian Plasma Thruster**

**2008 :** \$ 61,000

**2009 :** \$ 116,000

**2010 :** \$ 55,000

**Primary RFCD** 2403 ATOMIC AND MOLECULAR PHYSICS; NUCLEAR AND PARTICLE PHYSICS; PLASMA PHYSICS

**Collaborating/Partner Organisation(s)**

Astrium SAS

**Administering Organisation** The Australian National University

**Project Summary**

The collaboration between the ANU research group and ASTRIUM/EADS, the largest European aerospace company, is a unique opportunity for Australia to capitalize on the new discovery of the Helicon Double Layer Thruster made at the ANU. This will allow the Australian space community to stay abreast of international developments in space propulsion and to be with the for-runners of this new technology.

ANU will have direct access to ASTRIUM/EADS via the relationships developed in this project putting Australia in the enviable position of being an insider in future space developments concerning plasma thrusters and space technology in general.

**LP0883890** A/Prof VS Craig; A/Prof TJ Senden; Dr AS Fogden; Dr SJ Thomson

**Approved Project Title** **Innovative platforms for further enhancing security and durability of the Australian Polymer Banknote and other security documents**

**2008 :** \$ 65,000

**2009 :** \$ 127,500

**2010 :** \$ 127,500

**2011 :** \$ 65,000

**Primary RFCD** 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Note Printing Australia Limited

**Administering Organisation** The Australian National University

**Project Summary**

The polymer banknote is a symbol of world-leading Australian innovation and prosperity. The utility, durability and security of our banknotes underpins consumer confidence, economic stability and national security. Events of recent years, and opportunities and threats from rapid global information flow heighten the need to enhance and renew the many security features incorporated in our currency. The novel, cost-effective security-feature technologies to be developed in this project will also contribute to increasing the substantial polymer banknote export market, enable further expansion into other, even more demanding, security documents such as passports, and provide a needed boost to our domestic manufacturing industries.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883312** Dr Y Liu; Prof RL Withers; Dr JC Barry; Dr T Yamashita; Dr RR Taylor

**Approved Project Title** **Tailoring the microwave dielectric properties of promising electroceramics for use in wireless telecommunication components and devices**

**2008 :** \$ 22,500

**2009 :** \$ 35,313

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Microwave and Materials Designs

**Administering Organisation** The Australian National University

**Project Summary**

This project aims to develop and tailor the microwave dielectric properties of promising electroceramic materials specifically targeting next generation wireless telecommunications applications. The partnership between the ANU and the Australian company Microwave and Materials Designs has the potential to enable new microwave electroceramic materials to be discovered and then incorporated into new microwave components and/or devices developed in response to the requirements of the international wireless telecommunications market. The requested PhD student will gain experience in both the industrial and academic worlds and the skills needed to be part of Australia's high-tech workforce.

**LP0883970** Dr J Mavrogenes; Prof RJ Arculus

**Approved Project Title** **The Windimurra-Narndee Layered Complexes, Western Australia**

**2008 :** \$ 31,500

**2009 :** \$ 59,000

**2010 :** \$ 57,500

**2011 :** \$ 30,000

**Primary RFCD** 2601 GEOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Maximus Resources

Geological Survey of Western Australia

**Administering Organisation** The Australian National University

**Project Summary**

Mineral resources are a major export earner for Australia. If Australia is to continue benefiting from the current minerals boom then new reserves must be continuously found as existing reserves are mined out. The Windimurra-Narndee complexes represent a relatively new exploration target for platinum, nickel, and iron ore. Identification of a new mineral field in remote West Australia would be very good for the regional (and national) economy. Furthermore, advancing Australian's understanding of large intrusive systems will further raise international regard for the Australian academic community. The results of this work will help Australian mining companies better explore similar terranes.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0884046** Prof SR Miller; Prof J O'Brien; Prof AJ MacIntyre; Mr F Galtung; Mr N Duncan; Prof CJ Sampford

**Approved Project Title** **Corporate Governance, Regulation and Accountability: The Role of Multinational Corporations in Delevoping Commerical Advantage from Institutional Integrity**

**2008 :** \$ 38,954

**2009 :** \$ 79,705

**2010 :** \$ 77,682

**2011 :** \$ 36,931

**Primary RFCD** 4401 PHILOSOPHY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

TIRI

**Administering Organisation** The Australian National University

### Project Summary

The emerging market economies of India and China have become central to world economic growth. Despite a plethora of complex rules, regulatory reform agendas and industry-designed codes of conduct, doing business in these markets remains exceptionally problematic. Working in partnership with some of the world's leading multinational corporations, the project will lead to important practical and conceptual advances in the design and implementation of institutional integrity systems. This work has significant advantages for the emerging market economies and those seeking to enter into or expand their operations there. Moreover, it will add significantly to the visibility and leverage of Australian research.

**LP0883801** Prof TJ O'Neill; Prof RD Terrell; Prof AH Welsh; Prof MA Martin; Dr J Penm; Dr S Roberts; Mr TS Higgins

**Approved Project Title** **The improvement of investment approaches by developing and applying bootstrap methods to innovative evolutionary kernel-based subset time-series modelling.**

**2008 :** \$ 75,000

**2009 :** \$ 140,000

**2010 :** \$ 120,000

**2011 :** \$ 55,000

**Primary RFCD** 2302 STATISTICS

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

The Japanese Association of Administrative Science

Jiashan Fengyuan Co., Ltd.

The National Science Council in Taiwan

Rice Warner Actuaries

**Administering Organisation** The Australian National University

### Project Summary

With over \$1 trillion of investors' monies in the hands of fund managers, the importance of efficient investment decisions across all industry sectors is self evident. Even if the modest target of systematically improving decision making by 1 or 2 % is set, the aggregate economic benefit achieved, given the compounding effects will be enormous. Any developed or developing country will profit from such advanced decision-making approaches. Therefore 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 investment and other relevant sectors.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0883652** Dr KJ Reynolds; Dr B Bizumic; Ms E Subasic; Ms K Melsom; Ms FF MacGregor

**Approved Project Title** **Understanding the school as an intergroup system: Implications for school reform and improving student and staff outcomes.**

**2008 :** \$ 55,000  
**2009 :** \$ 110,000  
**2010 :** \$ 110,000  
**2011 :** \$ 55,000

**Primary RFCD** 3801 PSYCHOLOGY

**Collaborating/Partner Organisation(s)**

ACT Department of Education and Training

**Administering Organisation** The Australian National University

**Project Summary**

This project applies a novel social psychological understanding of group processes and intergroup relations to Australian schools. The result is a new and promising framework that will be trialed and evaluated through this project. The central idea is that one's group memberships and associated norms and practices directly impact on the attitudes and behaviours of individual members. The aim is to change the relevant groups within a school and how they relate in order to build a more positive school climate and higher school identification and as a result, improve school outcomes (e.g., attendance, academic achievement, well-being).

**LP0883613** Dr KJ Weber; Dr KR McIntosh; Dr H Jin; Dr MJ McCann; Dr I Melnyk; Dr P Fath

**Approved Project Title** **Minimising charge carrier recombination at silicon surfaces with improved dielectric coatings**

**2008 :** \$ 70,000  
**2009 :** \$ 135,000  
**2010 :** \$ 140,000  
**2011 :** \$ 75,000

**Primary RFCD** 2402 THEORETICAL AND CONDENSED MATTER PHYSICS

APDI Dr H Jin

**Collaborating/Partner Organisation(s)**

Spark Solar

GP Solar

**Administering Organisation** The Australian National University

**Project Summary**

The project will help to develop a vibrant PV industry in Australia, creating substantial employment opportunities. Spark Solar - one of the project partners - is the first dedicated PV manufacturer in Australia. There is a large and rapidly expanding overseas export market for solar panels. In addition, the large scale deployment of photovoltaic systems will help to reduce greenhouse gas emissions and thus mitigate the magnitude and severity of the effects of global warming.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

### University of Canberra

**LP0883814** Dr AD Clarke; Prof T Clarke; Prof AF Armstrong; Prof MA Adams; Prof PE Lewis; Dr A Richardson; Prof IA Eddie

**Approved Project Title** **Developing a responsive regulatory system for Australia's small corporations**

**2008 :** \$ 30,000

**2009 :** \$ 67,500

**2010 :** \$ 72,500

**2011 :** \$ 35,000

**Primary RFCD** 3901 LAW

APA(I) Award(s): 1

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

The Treasury

Council of Small Business Organisations of Australia Ltd

**Administering Organisation** University of Canberra

#### **Project Summary**

Small corporations employ approximately 50% of Australia's 10.5 million employed persons (ABS: Nov 2007). Promoting and maintaining small corporations is vital to the health of the Australian economy and the well being of society. This research will strengthen Australia's social and economic fabric by identifying, in consultation with regulators, industry leaders, government, the ideal regulatory environment for Australia's small corporations. A responsive regulatory framework will enable small corporations to conduct business more efficiently and profitably allowing for and creating structures and processes for encouraging and managing innovation creativity in this vital sector.

**LP0883333** Prof CJ Lennard; Prof A Cooper; Prof CP Roux; Dr J Robertson; Dr DB McNevin; Mr SJ Walsh

**Approved Project Title** **Silent witness: New analytical approaches to advance and enhance the forensic value of human hair**

**2008 :** \$ 34,627

**2009 :** \$ 69,254

**2010 :** \$ 69,254

**2011 :** \$ 34,627

**Primary RFCD** 3904 LAW ENFORCEMENT

APA(I) Award(s): 2

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

Australian Federal Police

Leica Microsystems Pty Ltd

**Administering Organisation** University of Canberra

#### **Project Summary**

The Australian criminal justice system is under ever-increasing scrutiny with recent threats to national security. Courtroom evidence is expected to carry an objective indication of its value, largely as a result of the success and widespread application of DNA evidence. This is problematic for conventional human hair evidence which has traditionally been presented as the expert opinion of a hair examiner who has conducted a microscopic comparison. A recent wrongful conviction in Canada and an associated Royal Commission has highlighted these problems. A comprehensive new hair examination sequence employing objective techniques will increase the forensic value of human hair, one of the most common evidence types found at crime scenes.