

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Victoria

The University of Melbourne

LP0989620 Prof GF Browning; Dr MS Marenda

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

2009 : \$ 140,000

2010 : \$ 140,000

2011 : \$ 140,000

Primary RFCD 3004 ANIMAL PRODUCTION

Collaborating/Partner Organisation(s)

Pfizer Australia Pty Limited

Administering Organisation The University of Melbourne

Project Summary

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

LP0989900 A/Prof R Buyya

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

2009 : \$ 65,000

2010 : \$ 65,000

2011 : \$ 65,000

Primary RFCD 2803 COMPUTER SOFTWARE

Collaborating/Partner Organisation(s)

Platform Computing Singapore Pte Ltd

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 78,420

2010 : \$ 78,420

2011 : \$ 78,420

Primary RFCD 3001 SOIL AND WATER SCIENCES

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

Incitec Pivot Ltd

Jiangsu Juhui Technologies Ltd

Administering Organisation The University of Melbourne

Project Summary

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

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0989375 Prof CS Fraser

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

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

Primary RFCD 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Defence Imagery & Geospatial Organisation

Administering Organisation The University of Melbourne

Project Summary

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

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

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

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

Primary RFCD 2606 ATMOSPHERIC SCIENCES

Collaborating/Partner Organisation(s)

Lakes Oil N.L.

Nexus Energy Limited

Geotrack International Pty Ltd

Administering Organisation The University of Melbourne

Project Summary

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

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

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

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

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating/Partner Organisation(s)

Molecular Biometrics, LLC,

Administering Organisation The University of Melbourne

Project Summary

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

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LP0989137 Prof RB Gasser; Dr I Beveridge

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

2009 : \$ 192,000

2010 : \$ 187,000

2011 : \$ 259,000

2012 : \$ 192,000

Primary RFCD 3005 VETERINARY SCIENCES

Collaborating/Partner Organisation(s)

Melbourne Water Corporation

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 250,000

2010 : \$ 260,000

2011 : \$ 210,000

Primary RFCD 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Raytheon Australia

Administering Organisation The University of Melbourne

Project Summary

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

Summary of Linkage Projects Proposals for Funding to Commence in 2009

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

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

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Berry St

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 107,000

2010 : \$ 101,000

2011 : \$ 100,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APDI Dr ME Carew

Collaborating/Partner Organisation(s)

Melbourne Water Corporation

Environment Protection Authority Victoria

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 71,000

2010 : \$ 57,000

2011 : \$ 63,000

Primary RFCD 3702 SOCIAL WORK

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Drummond Street Relationship Centre

NIU Development Inc

New Zealand Ministry of Health

Problem Gambling Foundation of New Zealand

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 26,140

2010 : \$ 26,140

2011 : \$ 26,140

Primary RFCD 3210 CLINICAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

St Vincent's Health

Administering Organisation The University of Melbourne

Project Summary

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

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LP0989575 A/Prof SE Kentish; Prof GW Stevens

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

2009 : \$ 46,000

2010 : \$ 35,000

2011 : \$ 40,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Industrial Galvanizers

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 72,000

2010 : \$ 80,000

2011 : \$ 90,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Collaborating/Partner Organisation(s)

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

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 220,000

2010 : \$ 250,000

Primary RFCD 3204 MEDICAL MICROBIOLOGY

Collaborating/Partner Organisation(s)

CSL Limited

Queensland Paediatric Infectious Diseases Laboratory

Administering Organisation The University of Melbourne

Project Summary

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

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

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

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

Primary RFCD 4203 CULTURAL STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

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

Administering Organisation The University of Melbourne

Project Summary

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

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

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

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

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Collaborating/Partner Organisation(s)

Dental Health Services Victoria

Administering Organisation The University of Melbourne

Project Summary

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

Summary of Linkage Projects Proposals for Funding to Commence in 2009

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

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

2009 : \$ 121,000

2010 : \$ 87,000

2011 : \$ 113,000

2012 : \$ 114,000

2013 : \$ 112,000

Primary RFCD 3210 CLINICAL SCIENCES

Collaborating/Partner Organisation(s)

Cochlear Ltd

The Shepherd Centre

Hear and Say Centre

Cora Barclay Centre

The Royal Victorian Eye & Ear Hospital

Administering Organisation The University of Melbourne

Project Summary

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

LP0989733 Prof PJ Scales; Dr M Rudman

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

2009 : \$ 145,000

2010 : \$ 137,000

2011 : \$ 115,000

Primary RFCD 2907 RESOURCES ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AMIRA International Ltd

Administering Organisation The University of Melbourne

Project Summary

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

Summary of Linkage Projects Proposals for Funding to Commence in 2009

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

Collaborating/Partner Organisation(s)

Victorian Health Services Commission
Avant Mutual Group Limited

Administering Organisation The University of Melbourne

Project Summary

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

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

Collaborating/Partner Organisation(s)

Fisheries Victoria, Department of Primary Industries

Administering Organisation The University of Melbourne

Project Summary

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

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

Collaborating/Partner Organisation(s)

Australian Choice Timber Supplies Pty Ltd

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 150,000

2010 : \$ 150,000

2011 : \$ 120,000

Primary RFCD 2605 HYDROLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Primary Industries, Victoria

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 168,000

2010 : \$ 188,000

2011 : \$ 95,000

Primary RFCD 3402 APPLIED ECONOMICS

Collaborating/Partner Organisation(s)

IP Australia

Australian Institute for Commercialisation

Watermark

Administering Organisation The University of Melbourne

Project Summary

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

Summary of Linkage Projects Proposals for Funding to Commence in 2009

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

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

2009 : \$ 145,000

2010 : \$ 145,000

2011 : \$ 90,000

2012 : \$ 220,000

Primary RFCD 2301 MATHEMATICS

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Rubicon Systems Australia Pty. Ltd.

Administering Organisation The University of Melbourne

Project Summary

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

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

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

2009 : \$ 177,000

2010 : \$ 164,000

2011 : \$ 100,000

2012 : \$ 180,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

NSW Department of Environment & Climate Change

Administering Organisation The University of Melbourne

Project Summary

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