

Summary of Linkage Projects Applications for Funding to Commence in 2006

New South Wales

The University of New South Wales

LP0669246 Dr E Baldry; Prof IW Webster; Dr T Butler; Mr SJ Eyland; Mr J Simpson

Approved Project Title **People with Mental Health Disorders and Cognitive Disabilities in the Criminal Justice System**

2006 : \$29,000

2007 : \$67,000

2008 : \$64,000

2009 : \$26,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Partner Organisation(s)

Justice Health

Department of Corrective Services New South Wales

New South Wales Council for Intellectual Disability

NSW Police

NSW Department of Housing

Department of Juvenile Justice

Administering Institution The University of New South Wales

Project Summary

Over 40 000 people are imprisoned in Australia each year, almost half of them in NSW. 40% males and 60% females involved in the NSW CJS have a MHD or CD with many having a dual diagnosis. The appropriateness of the arrest and imprisonment of many people with MHDCD is currently of serious public, social and professional concern. Interventions are hampered by lack of an overall and longitudinal appreciation of the CJS's impact upon and interaction with such people. This study will provide integrated information for the first time in Australia and give CJS and human service agencies a coherent picture of the involvement of people with MHDCD in the CJS, which will assist development of new interventions to address duty of care and human rights.

LP0669837 Dr S Bandyopadhyay; Prof AB Yu; Dr Q Zeng

Approved Project Title **Utilization of fly ash in manufacturing polypropylene composites: a fundamental study**

2006 : \$12,325

2007 : \$24,650

2008 : \$24,650

2009 : \$12,325

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

Partner Organisation(s)

Cement Australia - Pozzalonc Enterprises

Administering Institution The University of New South Wales

Project Summary

A large amount of coal fly ash is generated from thermal power stations and only a small amount has found applications, causing a significant economic and environmental problem in Australia and worldwide. This project aims to develop techniques to use fly ash in the manufacture of polymer composite and, in particular, explore the underlying fundamentals by means of various advanced characterization and simulation techniques. The expected outcomes may lead to an environmentally sustainable and large quantity use of fly ash and bring about new business opportunities. This, together with the proposed research training, represents a useful contribution to the development of a more competitive Australia.

Summary of Linkage Projects Applications for Funding to Commence in 2006

LP0668907 Dr JB Barnes; Prof C Rizos; A/Prof AG Dempster; Dr J LaMance

Approved Project Title **Structural Deformation Monitoring Integrating a New Wireless Positioning Technology**

with GPS

2006 : \$55,000

2007 : \$110,000

2008 : \$110,000

2009 : \$55,000

Primary RFCD 2910 GEOMATIC ENGINEERING

APA(I) Award(s): 2

Partner Organisation(s)

Locata Corporation

Leica Geosystems

Administering Institution The University of New South Wales

Project Summary

In today's society, current positioning technologies are unable to provide location information with the necessary accuracy, reliability, and low cost, for an expanding number of location aware applications. Locata's positioning technology has the potential to meet these requirements through a network of terrestrial based signal transmitters and GPS integration. The proposed research will provide advanced training to graduate students and enable this technology to be realised. The application of the technology is almost limitless, from surveying and civil engineering projects, manufacturing industries and consumer Location Based Services (LBS), where the benefits would be enormous.

LP0669299 A/Prof S Cohen

Approved Project Title **Ethical Excellence in the Public Sector in New South Wales**

2006 : \$56,056

2007 : \$125,563

2008 : \$69,507

Primary RFCD 4401 PHILOSOPHY

APA(I) Award(s): 1

Partner Organisation(s)

Roads and Traffic Authority, NSW

NSW Department of Commerce

Administering Institution The University of New South Wales

Project Summary

The benefits are to the public sector, and to the public at large in dealing with public sector organisations. Ethical performance is commonly identified as a deliverable from the public service; and the public trust in this aspect of public service performance is critical. The project will help to establish and identify ethical best practice, allowing those organisations and the public to be aware of and to refer to indicators and transparent performance. It will produce rigorous analysis, and offer recommendations which will have practical implementations.

Summary of Linkage Projects Applications for Funding to Commence in 2006

LP0669402 Prof MR Dadds; Dr DJ Hawes

Approved Project Title **Emotion processing deficits in childhood: Risk for psychopathology and indications for clinical intervention**

2006 : \$50,000

2007 : \$100,000

2008 : \$100,000

2009 : \$50,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Partner Organisation(s)

Royal Far West Children's Health Scheme

Administering Institution The University of New South Wales

Project Summary

Mental health problems and antisocial behaviour cost Australia millions of dollars every year through the mental health and criminal justice systems. Families in rural regions of Australia are particularly disadvantaged in terms of access to clinical services. This research will examine and train emotion recognition skills and other developmental characteristics in children referred for treatment for a range of behavioural and psychological disorders. Findings will lead to improvements in methods for early detection of child psychopathology with the potential for broad community implementation, and will contribute to the development of clinical protocols and treatment guidelines for early intervention and prevention.

LP0669543 Dr NJ Kessissoglou; Mr BJ Kenyon

Approved Project Title **Prediction and optimisation of the acoustic performance of mufflers for sleep apnea devices**

2006 : \$12,325

2007 : \$24,650

2008 : \$24,650

2009 : \$12,325

Primary RFCD 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

Partner Organisation(s)

ResMed Ltd

Administering Institution The University of New South Wales

Project Summary

ResMed is a world leader in the technology of developing products for treating obstructive sleep apnea (OSA). ResMed provided the first successful non-invasive treatment of OSA with their sleep apnea device. Noise reduction is an important issue in the development of this product, since these devices operate on a bedside table. This project will enable the acoustic performance of these small irregularly shaped mufflers to be reliably predicted and optimised. The successful outcomes will improve the quality of the well-being of the user. This research also has relevance to the design of mufflers for use in broader applications such as locomotives and ferries.

Summary of Linkage Projects Applications for Funding to Commence in 2006

LP0669638 Prof Dr JC Lai; Dr AZ Tirkel; Dr TA Evans; A/Prof D Fraser

Approved Project Title Listen and see: Remote sensing and imaging of insect pests

2006 : \$24,325

2007 : \$54,325

2008 : \$57,500

2009 : \$27,500

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

Partner Organisation(s)

Scientific Technology

JI Peston

Administering Institution The University of New South Wales

Project Summary

Australia is the third largest market for termite control, after the USA and Japan. It has been estimated by CSIRO that about one in three Australian houses will be attacked by termites at some stage. Currently, an Australian designed, patented and manufactured product is the only reliable termite detector. This research, developing a novel sensor array and imaging technology, will further consolidate Australia's world leading position in termite detection technology, revolutionise how termite behavioural research will be conducted and significantly increase the world-wide capability in termite control and hence reduce the costs of termite damage. It will deliver significant economic and environmental benefits to Australia.

LP0669493 A/Prof GL Leslie; Dr DE Richardson; Prof AG Fane; Dr HJ Muller

Approved Project Title Innovative strategy for salt management and water recovery from newsprint mill effluent using membrane processes

2006 : \$30,000

2007 : \$60,000

2008 : \$55,000

2009 : \$25,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

Partner Organisation(s)

Norske Skog Paper Mills (Australia) Limited

Memcor

Administering Institution The University of New South Wales

Project Summary

Newsprint mills are a major employer in regional Australia. The mills are located in environmentally sensitive areas, consume large quantities of water and return high levels of salt to the environment. To remain competitive the newsprint industry, like all industries in regional Australia must develop new strategies for water recycling and salt management. Successful execution of this project will minimize water consumption in newsprint production, mitigate the effects of increased sodicity in soils irrigated with mill effluent and accelerate the commercial development a hydrophobic microporous membrane for water recycling and salt removal in environmentally sensitive areas of inland Australia.

Summary of Linkage Projects Applications for Funding to Commence in 2006

LP0669090 Dr P Maheshwari

Approved Project Title **Efficient Web Services Discovery in Peer-to-Peer Networks**

2006 : \$12,325

2007 : \$24,650

2008 : \$24,650

2009 : \$12,325

Primary RFCD 2803 COMPUTER SOFTWARE

APA(I) Award(s): 1

Partner Organisation(s)

Beacon Software Innovations Pty Ltd.

Administering Institution The University of New South Wales

Project Summary

The most direct application of this research will be in the area of applying Web services technologies and discovery techniques for building enterprise-strength, B2B and B2G solutions for the Australian SMEs. Economic benefits are applicable to the Australian SMEs, major government organizations, large cooperations and universities who are considering Web services-based dynamic integration of their IT systems in the near future. The outcomes of this project have potential commercial value for Beacon Software Innovations Pty Ltd, which will put the company in competitive advantage in the budget management software industry.

LP0669801 Dr M Manefield; Prof SL Kjelleberg; A/Prof M Guilhaus; Dr DF Schleheck

Approved Project Title **Microbial community characterisation for bioprocessing of chlorinated hydrocarbon contaminated groundwater**

2006 : \$60,000

2007 : \$108,500

2008 : \$103,500

2009 : \$55,000

Primary RFCD 2703 MICROBIOLOGY

APA(I) Award(s): 1

Partner Organisation(s)

Orica Australia Pty Ltd

Administering Institution The University of New South Wales

Project Summary

Due to irresponsible industrial practices, Australia has hundreds of polluted soil and water environments. This includes the notorious groundwater contamination underlying Botany in Sydney, an area of rich industrial, residential and cultural significance. The use of microbes to clean up polluted environments, such as the Botany groundwater, is known as bioremediation - a process exploiting the natural metabolic versatility of microbes. To clean up the polluted groundwater in Botany, mixed species communities of pollutant degrading microbes are being produced. Novel tools to reveal the inner workings of these microscopic communities are also being developed, giving Australia an unprecedented advantage in the global bioremediation market.

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LP0669480 Dr AS McIntosh; Prof CF Finch; Dr P McCrory; Dr G Rechnitzer

Approved Project Title Pedal and motor cycle helmet performance study

2006 : \$45,000

2007 : \$90,000

2008 : \$79,000

2009 : \$34,000

Primary RFCD 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 2

Partner Organisation(s)

Australian Transport Safety Bureau

NRMA Motoring & Services

Roads and Traffic Authority of NSW

Transport Accident Commission Victoria

DVExperts International

Administering Institution The University of New South Wales

Project Summary

Cycling is a form of recreation and transport. Both pedal and motor cyclists are exposed to risks of head and neck injury. These injuries occur in young people and can have substantial health and economic impacts on the individuals and society. It is believed that injury rates can be reduced and an active lifestyle encouraged by improving helmet performance and understanding factors that lead to non-use. As helmet use is mandatory it is important that Australians are provided with optimal helmets. The specification of product standards is also relevant for international trade agreements.

LP0669179 Dr X Shang; Prof IB Katz; Dr AC West

Approved Project Title Developing An Effective System Of Child Protection In China

2006 : \$28,188

2007 : \$61,688

2008 : \$64,850

2009 : \$31,350

Primary RFCD 3702 SOCIAL WORK

Partner Organisation(s)

Save the Children UK

Administering Institution The University of New South Wales

Project Summary

This project will be of benefit Australia in the following aspects: (1) It will provide Australia greater knowledge of child protection practices in a major East Asian society, where kinship and family networks play an active role in protecting children within their own communities. (2) It offers a unique opportunity for Australia to demonstrate its commitment to utilising its own research to the benefit of a major developing country with which it is establishing strong linkages across many activities. (3) It will strengthen the existing connections among Australia higher educational institutions, Chinese government and non-government organizations, and international NGO.

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LP0669163 Prof J Shaw; Dr D Del Favero; Prof NC Brown; Prof PJ Compton; Dr M Pagnucco; Dr FA van Schaik; Dr CT Jin; A/Prof H Seah; Prof P Weibel; Ms SI Kenderdine; Mr T Hart; Dr JM Fritz

Approved Project Title **Reformulating narrative in virtual heritage using a co-evolutionary model of immersive interactivity**

2006 : \$72,495
2007 : \$171,764
2008 : \$187,137
2009 : \$87,868

Primary RFCD 4103 CINEMA, ELECTRONIC ARTS AND MULTIMEDIA
APA(I) Award(s): 1

Partner Organisation(s)

Australian Centre for the Moving Image
EPIDEMIC
Gollings Photography Pty. Ltd
Museum Victoria
ZKM

Administering Institution The University of New South Wales

Project Summary

The application of machine intelligence research within virtual heritage, interactive cinema and the entertainment industries, with its application across a range of new media art forms, home theatre, location based entertainment, and on-line education, captures pioneering cultural and economic benefits for Australia. This study integrates autonomous machine agent and interface technology with the artistic potential of digital cinema. It provides innovative ways of satisfying the voracious demand for sophisticated content and narrative enrichment in new media and of exploiting the intense global interest in digital forms of entertainment.

LP0669252 A/Prof BK Sidhu; Prof T Smith; Prof JH Roberts; Dr DP Simmonds; Dr EL Welch; Mr GJ Warren

Approved Project Title **The Determinants and Impacts of Analyst Activity in Australian Equity Markets**

2006 : \$47,500
2007 : \$95,000
2008 : \$80,000
2009 : \$32,500

Primary RFCD 3402 APPLIED ECONOMICS

Partner Organisation(s)

Australian Stock Exchange Limited

Administering Institution The University of New South Wales

Project Summary

Deep and liquid markets are essential ingredients to a well functioning capital market, and can assist in capital formation and the growth of firms. A rich information environment is in turn necessary to ensure liquidity and the minimisation of cost of capital. A greater understanding of what promotes a rich information environment, specifically through the activity of financial analysts, will assist in formulation of policies at both the Australian Stock Exchange and individual company level, and indeed at the government level given Federal and State Government initiatives to encourage the growth of corporate Australia.

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LP0669678 Prof IH Sloan; Dr AJ Green

Approved Project Title **Novel Mathematical Technologies for Financial Valuation and Risk**

2006 : \$37,500

2007 : \$75,000

2008 : \$73,500

2009 : \$36,000

Primary RFCD 2301 MATHEMATICS

Partner Organisation(s)

Macquarie Bank Ltd

Administering Institution The University of New South Wales

Project Summary

The finance industry is a key industry sector in Australia, with a highly qualified and well-paid work force. The profitability and stability of financial institutions rests in part on their ability to accurately and rapidly value innovative financial products and to quantify risk, yet many contemporary financial products are difficult to value quickly and accurately. This project will bring innovative mathematical technologies to bear on complex financial problems. It has the potential to improve both the profitability and stability of Australian financial institutions, and to enhance their role regionally and internationally.

LP0669462 Dr J Suchard

Approved Project Title **The contribution of the private equity and venture capital industry to the Australian economy and society**

2006 : \$25,500

2007 : \$45,500

2008 : \$37,500

2009 : \$17,500

Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT

Partner Organisation(s)

AVCAL

Administering Institution The University of New South Wales

Project Summary

This study enables the priority goal of promoting an innovation culture and economy through research, by assessing the contribution of private equity investment in dynamic firms and evaluating industry practices. It guides the industry body (AVCAL) and the Government in formulating private equity and venture capital policy and initiatives to stimulate innovation and success in the Australian economy. The results allow the assessment of the success of the government programs and assists the private equity industry in quantifying its effectiveness in stimulating economic growth. Further, the study assists entrepreneurial firms developing innovative concepts, in understanding the benefits of seeking venture capital support in Australia.

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LP0669264 A/Prof GJ Twite; Prof T Smith; Dr J Kim

Approved Project Title Valuation, Investment Timing and Equity Financing of Commercial Real Estate in the Australian Market

2006 : \$17,000

2007 : \$67,000

2008 : \$50,000

Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT

Partner Organisation(s)

AMP Capital Investors
General Property Trust
Jones Lang Lasalle
Macquarie Bank
Westfield Group
Stockland
Australian Stock Exchange
Colliers International

Administering Institution The University of New South Wales

Project Summary

Commercial real estate represents a significant component of the investment opportunities available in Australia. This sector is currently valued at approximately \$1,500 billion with in excess of 85% of development financed via property trusts. The effective management of these assets requires an understanding of the tools available and their impact on risk and return. Despite its importance there is limited empirical evidence on the factors that influence land pricing, the development process and the provision of equity financing to this sector. Here we propose to undertake two interrelated studies designed to address this gap, providing management with a benchmark for assessing investment alternatives within the real estate sector.

LP0669178 Prof MD Willcox; Mr DC Pye; A/Prof C Morris; Dr BJ Walsh; Dr Z Zhao

Approved Project Title Identification of novel biomarkers for diabetic retinopathy in tears

2006 : \$25,000

2007 : \$50,000

2008 : \$55,000

2009 : \$30,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

APA(I) Award(s): 1

Partner Organisation(s)

Minomic Pty Ltd
Optometrists Association Australia (NSW Division)
Diabetes Australia-NSW
Institute for Eye Research

Administering Institution The University of New South Wales

Project Summary

There are around 134,000 people with diabetic retinopathy in Australia. The disease affects patients' physical and mental state and economical and social cost is enormous. This research aims to find new biomarkers for the disease which may lead to better treatment and management. Patient's quality of life may be significantly improved by early diagnosis and treatment and the burden to the community reduced. This project also gives industrial partners the opportunity to develop new products to diagnose and monitor the disease.

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LP0669846 Prof AB Zwi

Approved Project Title **After the questions: outcomes of routine screening for domestic violence in NSW Health services**

2006 : \$14,825

2007 : \$29,650

2008 : \$30,070

2009 : \$15,245

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Partner Organisation(s)

NSW Dept Health

Administering Institution The University of New South Wales

Project Summary

Recent research indicates that domestic violence is the leading contributor to death, disability and illness in women aged 15-44 in Australia and leads to health costs of \$314 m annually (VicHealth 2004, Access Economics 2004). Routine screening is a low cost measure aimed at prevention and early intervention for domestic violence, which has been successfully introduced for women entering antenatal, early childhood, mental health and drug and alcohol services operated by NSW Health. The research will be the first study of its size to consider the outcomes of routine screening for domestic violence in public health settings in the Australian context.