

Summary of Linkage Projects Proposals for Funding to Commence in 2007

New South Wales

The University of Sydney

LP0775324 Prof MM Bilek; Prof DR McKenzie; Prof Y Mai

Approved Project Title **Fracture-Resistant Highly Insulating Vacuum Glazing**

2007 : \$ 325,000

2008 : \$ 320,000

2009 : \$ 320,000

2010 : \$ 190,000

2011 : \$ 100,000

Primary RFCD 2405 CLASSICAL PHYSICS

Collaborating/Partner Organisation(s)

Sydney Glass Pty. Ltd

Nippon Sheet Glass Co., Ltd

Administering Organisation The University of Sydney

Project Summary

Vacuum glazing can provide thermal and sound insulation for windows that achieve the benefits of double glazing without the increased thickness by incorporating a vacuum space between two sheets of glass. The gap is maintained by pillars under high compressive stress due to atmospheric pressure. In this project, we will study the effect of pillar designs and materials on the U-value and the mechanical performance of these complex structures. Detailed simulations and measurements of stress distributions in the pillars, edge seals and glass sheets, under static and dynamic loading conditions, will allow us to develop glazing structures with greatly increased mechanical strength.

LP0775241 Prof EJ Blakely

Approved Project Title **Finding new economic drivers for Sea Change (coastal) and similar rapidly growing communities**

2007 : \$ 76,400

2008 : \$ 75,000

Primary RFCD 3199 OTHER ARCHITECTURE, URBAN ENVIRONMENT AND BUILDING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Sea Change Taskforce Secretariat

Administering Organisation The University of Sydney

Project Summary

This project is of major benefit to developing more environmentally sensitive but diverse economies for coastal communities. Coastal communities are commuter or tourism dominated, each of these issues generate both current and future liabilities for the communities and the nation.

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LP0775306 Dr JD Buchanan; Ms B van Wanrooy; Ms GA Considine

Approved Project Title **WorkChoices and the Evolution of Australian Working Life: The Changing Role of the Labour Contract**

2007 : \$ 281,030

2008 : \$ 141,030

2009 : \$ 189,530

2010 : \$ 202,000

2011 : \$ 101,378

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APDI Ms B van Wanrooy

Collaborating/Partner Organisation(s)

Unions NSW

Administering Organisation The University of Sydney

Project Summary

Both internationally and nationally, there is much speculation as to how the transformation of the industrial relations framework will impact on workers and the broader community. Knowledge of the impact of WorkChoices is vital for employers, unions and governments to understand the influence the industrial relations framework has on Australia's social and economic fabric. The survey will address some of the social issues that are debated widely in Australia such as the impact of the industrial relations changes on wages and wage inequality, work and family balance, skills development and shortages, workers in regional areas, and workers in low skilled and low paid jobs.

LP0775441 A/Prof H Chan; Dr PM Young; Dr D Traini

Approved Project Title **Mannitol Powders for Assessment of Asthma in Children**

2007 : \$ 75,000

2008 : \$ 70,000

Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Collaborating/Partner Organisation(s)

Pharmaxis

Administering Organisation The University of Sydney

Project Summary

A successful conclusion of this project will enable Australia to become a world leader in childhood asthma assessment. The availability of an objective diagnostic test for early detection of asthma would assist formulating early treatment strategies at this crucial stage in the progression of the disease, improving the quality of life of asthma sufferers in their early years. The Australian pharmaceutical sector will benefit through the ability to develop proprietary formulations targeted towards taking advantages of the scientific knowledge on pharmaceutical powders and aerosols. The mannitol testing is environmental friendly as powder aerosol delivery does not require any harmful organic solvents to operate.

Summary of Linkage Projects Proposals for Funding to Commence in 2007

LP0775506 Dr R Dixon; Dr G Brown; Dr R Malik; Dr J Toribio; Dr RM Dixon; Dr SF Walton

Approved Project Title **Evaluating the impact of new interdisciplinary interventions to enhance dog health to benefit community health outcomes in remote Indigenous communities**

2007 : \$ 140,000
2008 : \$ 123,000
2009 : \$ 133,543

Primary RFCD 3005 VETERINARY SCIENCES

APA(I) Award(s): 1
APDI Dr G Brown

Collaborating/Partner Organisation(s)
Animal Management in Rural and Remote Indigenous Communities
RSPCA NSW
Warlukurlangu Artists Aboriginal Association
IDEXX Laboratories Australia

Administering Organisation The University of Sydney

Project Summary

Indigenous health and welfare is of major concern for Australians. This project, which focuses on the dog, also recognises that the dog harbours a number of diseases that can infect humans. To maintain sustainable dog health programs to reduce disease in dogs, and, as a corollary, have positive impact on human health and welfare, culturally-relevant, evidence-based education programs are critical. Dog health programs will indirectly improve the expectations, standards and self-worth of many Indigenous Australians. As a consequence, the national benefits include the development of environmentally sustainable Indigenous communities, and the strengthening of Australia's social and economic fabric especially in rural and remote areas.

LP0774962 Prof J Guthrie; Prof CA Adams; Ms C Boedker; Prof J Mouritsen; Prof G Roos

Approved Project Title **Visualising Value in Australian Organisations: Case Studies in Extended Performance Management, Measurement and Reporting**

2007 : \$ 78,000
2008 : \$ 81,000
2009 : \$ 85,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
NSW Department of Lands
Computer Sciences Corporation
Westpac Australia
Australian Red Cross Blood Service
Society of Knowledge Economics

Administering Organisation The University of Sydney

Project Summary

This research positions and develops Australia at the forefront of the knowledge economy. Participating organisations will realise insights into their invisible resources and improve their understanding of the performance, utilisation and productivity of their intangible resources. Corporate social responsibility and social and environmental management are recognized as crucial to the contemporary organisation and this research provides a means of managing, measuring and reporting these perspectives, enhancing Australia's reputation and long-term economic sustainability.

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LP0774927 Dr BS Hawkett; Prof GG Warr; Dr SK Jones
Approved Project Title Encapsulation of magnetic nanoparticles for the hyperthermia treatment of liver cancer
2007 : \$ 175,000
2008 : \$ 200,000
2009 : \$ 150,000
Primary RFCD 2505 MACROMOLECULAR CHEMISTRY

Collaborating/Partner Organisation(s)

Sirtex Medical Limited

Administering Organisation The University of Sydney

Project Summary

This project will provide targeted hyperthermia treatment for liver cancer. The treatment will be non systemic and therefore, unlike radiotherapy and chemotherapy, will cause minimal collateral damage to healthy tissue within the patient. Liver cancer is one of the commoner forms of cancer in humans with estimates of up to 2 million patients per year being affected worldwide. Currently 95% of these patients will die from the condition. This project will lead to improvements in health outcomes for liver cancer patients. As a consequence of the worldwide demand for this treatment, and related equipment, the project will generate foreign exchange earnings through exports and new job opportunities in the clever end of small business enterprise.

LP0775438 Prof BS Haynes; Dr A Montoya
Approved Project Title Process Chemistry for Distributed Manufacture of Nitric Acid
2007 : \$ 85,000
2008 : \$ 77,030
2009 : \$ 77,030
Primary RFCD 2906 CHEMICAL ENGINEERING

APDI Dr A Montoya

Collaborating/Partner Organisation(s)

Orica Pty Ltd

Administering Organisation The University of Sydney

Project Summary

This project will benefit Australia by enabling a new approach to the manufacture of explosives for the country's mining industry which will provide the entire explosives supply chain with greater safety and security. Development of this technology will enhance Orica's competitive position as the largest manufacturer of mining explosives in the world and will produce wealth for the country through the continued success of this ASX Top 50 company and the export of the technology.

LP0775055 Prof DA Hensher; Prof PR Stopher; Dr SP Greaves; Mr RW Whelan
Approved Project Title Exploring Behavioural Responses of Motorists to Exposure-Based Charging Mechanisms
2007 : \$ 95,000
2008 : \$ 100,000
2009 : \$ 35,000
Primary RFCD 3402 APPLIED ECONOMICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AAMI Ltd

Administering Organisation The University of Sydney

Project Summary

Our continued reliance on cars is estimated to cost the Australian economy around \$50 billion per year in accidents, congestion and air pollution. This project delivers a new approach to reduce these externalities, in which charges are levied on drivers based on their accident history, the kilometres driven and the circumstances under which these kilometres are driven. In addition to the safety and congestion benefits, the outcomes of the project will be of importance to those charged with raising revenue to support infrastructure maintenance and development, and the insurance industry as a basis for reducing risks in driving and making premiums more equitable.

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LP0775083 A/Prof PW Jones

Approved Project Title **AusAID at work: the design, delivery and impact of Australian aid to education in Asia and the Pacific**

2007 : \$ 96,453
2008 : \$ 96,804
2009 : \$ 100,548

Primary RFCD 3301 EDUCATION STUDIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Australian Agency for International Development (AusAID)

Administering Organisation The University of Sydney

Project Summary

The project is designed to determine how Australian overseas aid can make more effective interventions in the education sector, at a time of significant budgetary increases. Australian overseas aid is officially regarded as a key means of promoting poverty reduction, economic growth, social cohesion, expanded trade and regional security. Each objective is significant for Australian futures. Aid to the education sector has been taking on increasing weight, given that well-performing education systems are known to impact positively in these areas. The project provides a platform for greater impact of Australian aid, including that provided in partnership with other donors.

LP0774839 Dr MD McLeod; Dr AR McKinney

Approved Project Title **Synthesis and Analysis of Canine Anabolic Steroid Metabolites**

2007 : \$ 48,620
2008 : \$ 51,691
2009 : \$ 58,120

Primary RFCD 2503 ORGANIC CHEMISTRY

Collaborating/Partner Organisation(s)
Australian Racing Forensic Laboratory

Administering Organisation The University of Sydney

Project Summary

The Australian racing industry is a major driver of economic activity. In NSW, racing is estimated to contribute \$1,000 million to GDP, \$151 million to Government revenue and provide 50,000 jobs. The future security and prosperity of the racing industry depends on maintaining the highest standards of integrity in the public eye, and this in turn depends on the enforcement of regulations relating to illicit substances. The outcome of this project will be the introduction of robust methods of analysis for potential drug abuse in greyhound racing that will position Australia as a world leader in the field.

LP0775183 Dr AJ Pile; Prof CB Pattiaratchi; Prof DJ Booth; Dr M Thomson; Dr D Skropeta

Approved Project Title **Effect of deep-sea drilling on sustainability of deep-sea ecosystems.**

2007 : \$ 250,000
2008 : \$ 214,000
2009 : \$ 25,118

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Santos Ltd.
Woodside Energy Ltd

Administering Organisation The University of Sydney

Project Summary

Offshore oil and gas production makes a significant contribution to the Australian economy and enhances our energy security. Australia's vast deep-sea reserves of hydrocarbons lie on the NW Shelf and in Bass Strait, ecological 'hot spots' that are extremely vulnerable to the impact of exploration, extraction and production. Using deep-sea equipment, we will conduct the field experiments that are essential to understanding these ecosystems and the impact of deep-sea structures. Our advances will produce data and develop methodologies that will make Australia a world leader in reconciling our deep-sea energy and environmental needs.

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LP0775153 Prof SP Ringer; Dr JM Cairney; Mr JG Williams; Dr FJ Barbaro; Mr CR Killmore

Approved Project Title **Optimisation of Nanostructure in new Microalloyed Strip Cast Steels for Control of Properties**

2007 : \$ 140,000

2008 : \$ 150,000

2009 : \$ 150,000

Primary RFCD 2913 METALLURGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BlueScope Steel

Administering Organisation The University of Sydney

Project Summary

Australia is an internationally competitive producer of steel and stands to benefit from the improvements in steel design made possible by a more fundamental understanding of the relationship between steel nanostructure and steel properties and performance. Using targeted microalloying additions, this project aims to develop a new class of strip cast steels that can serve entirely new applications and so open up new market growth opportunities in Australia's manufacturing industry. This research falls under the national research priority 'Frontier Technologies for Transforming Australian Industry'.

LP0774919 A/Prof DJ Schofield; Dr ME Passey; Mr A Earnest; A/Prof R Percival; A/Prof SJ Kelly

Approved Project Title **Economic impacts of disease on older workers: Costs to government and individuals and opportunities for intervention**

2007 : \$ 90,000

2008 : \$ 80,000

2009 : \$ 90,000

Primary RFCD 3402 APPLIED ECONOMICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Pfizer Australia

Administering Organisation The University of Sydney

Project Summary

With an ageing workforce, Australia is at risk of having an inadequate workforce to ensure economic growth and to maintain sufficient taxation revenue to support future needs.

This project will provide fill substantial gaps in the Australian evidence the health conditions that keep older workers out of the labour market and that diminish their own immediate and long-term livings standards and reduce funds available to government. We will address one of the most significant issues resulting fundamental changes to the demography of the Australian labour market and one is regularly raised by the Prime Minister and Treasurer in their speeches following the Intergenerational Report.

LP0775167 Prof R Shine

Approved Project Title **Predicting the ecological impact of cane toads on native fauna of northwestern Australia**

2007 : \$ 172,683

2008 : \$ 170,000

2009 : \$ 161,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Conservation and Land Management

Australian Reptile Park

Department of Environment and Heritage

Administering Organisation The University of Sydney

Project Summary

At current rates of spread, cane toads will invade the Kimberley region of northwestern Australia within a few years. We urgently need to be able to predict which native species will be at risk from toads, and which will be relatively unaffected either because they are not killed by toads, or because they can rapidly learn, or evolve, in ways that reduce this impact and thus allow population recovery. We will obtain these data by exposing native animals to toads and recording the results; and thus, can identify the most important priorities for conservation efforts.

