

Summary of Linkage Projects Proposals for Funding to Commence in 2007

Victoria

Monash University

LP0776957 Dr PC Andrews; A/Prof PC Junk; Prof GB Deacon; A/Prof M Silberstein

Approved Project Title **Development and Testing of Novel Contrast Agents for Diagnostic Imaging**

2007 : \$ 65,000

2008 : \$ 122,500

2009 : \$ 120,000

2010 : \$ 62,500

Primary RFCD 2502 INORGANIC CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Schering AG

Administering Organisation Monash University

Project Summary

Demand for diagnostic imaging in the Australian healthcare system is growing at over 5% per annum. To facilitate imaging, Australia imports radiographic contrast media costing in excess of \$50 million every year. Existing iodine-based agents are not ideal for X-ray absorption in current CT scanners and also cause moderate to severe allergic reaction in around 5% of all patients, sometimes with fatal results. New radiographic media, which give enhanced contrast and provide greater patient comfort and safety are essential. Even a small fraction of the international market would generate millions of dollars in income, support growth and expertise in Imaging Technologies, and provide new markets for Australian mining of rare earth and bismuth metals.

LP0776783 A/Prof L Churilov; Prof GI Webb; Dr D Neiger

Approved Project Title **Integrated Intelligent Decision Support for Field Design and Management of Census Operations in Australia**

2007 : \$ 45,059

2008 : \$ 85,118

2009 : \$ 80,118

2010 : \$ 40,059

Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Australian Bureau of Statistics

Administering Organisation Monash University

Project Summary

This project contributes to a more reliable and accurate measurement of the number and key characteristics of Australian people by supporting a more efficient and effective field design and management of the Census operations. As the Census provides a snapshot of Australia and is crucial to communities, private institutions and all levels of government in the planning of services and facilities, this project not only addresses the research priority of smart information use, but also contributes to strengthening Australia's social and economic fabric. This project will also train highly qualified IT specialists critical to Australia's scientific and industrial development, thus increasing our competitiveness in information technology R&D.

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LP0776702 Dr FG Collins; Prof M Forsyth; A/Prof JG Sanjayan

Approved Project Title **Securing Longevity of Reinforced Concrete Infrastructure Through Enhanced Cathodic Protection Design**

2007 : \$ 20,000

2008 : \$ 39,000

2009 : \$ 36,000

2010 : \$ 17,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Maunsell Australia

Administering Organisation Monash University

Project Summary

The sustainability of Australia's extensive maritime infrastructure is impaired by corrosion, causing ongoing rehabilitation and reduced service life. Cathodic protection (CP) is most widely used to restore corrosion-damaged concrete, however the design principles are debated and uncertainty exists on how ongoing performance should be monitored. Australian Industry will benefit from: (i) Less expenditure and disruption to operations of key infrastructure; (ii) More sustainable maritime infrastructure requiring less labour, time and capital expenditure on inspection, testing, maintenance and rehabilitation works; (iii) Availability of experts with advanced training in CP of reinforced concrete; (iv) Update Australian CP Standard AS 2832.5-2002

LP0776363 Dr JM Deppeler; Dr JM Mitchell; Dr JM Ryan

Approved Project Title **Using Data for School Change: Improving Literacy Achievement In Secondary Schools**

2007 : \$ 30,000

2008 : \$ 80,000

2009 : \$ 97,500

2010 : \$ 47,500

Primary RFCD 3301 EDUCATION STUDIES

Collaborating/Partner Organisation(s)

Catholic Education Office, Melbourne

Administering Organisation Monash University

Project Summary

Highly effective schools and improved outcomes for all students are key objectives of the Australian Government. A central equity issue and key goal is to improve outcomes of Australia's most educationally disadvantaged students, including those with disabilities and others who are at risk of not achieving national benchmarks of literacy. The proposed project has the potential to make a strong contribution to national benefits by developing a model for improving literacy achievement and by providing new data on the future likely requirements of 21st century educational systems and schools which will play a leading role in promoting Australia's educational standards and priorities.

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LP0776796 Dr NC Karmakar; Dr I Brown

Approved Project Title **Radio Frequency Wireless Monitoring in Sleep Apnoea (Particularly for Paediatric Patients)**

2007 : \$ 14,000

2008 : \$ 27,000

2009 : \$ 25,813

2010 : \$ 12,813

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Regni Science and Technology Pty Ltd

Administering Organisation Monash University

Project Summary

Disease diagnosis, chronic disease monitoring and stress monitoring all are limited by diagnostic systems that are attached to patients by wires restricting the recording of such parameters to limited intervals in the clinician's office. The proposed system will enable patients to have a range of physiological parameters recorded without the attachment of wires. This will enable extensive periods of diagnostic data to be recorded to characterize respiratory, cardiac and other parameters during extended periods, and during normal daily activity. In addition the system can be used to monitor patients with chronic disease and detect trends in their disease.

LP0776494 Prof RC Mac Nally; Dr RM Thompson

Approved Project Title **The importance of dispersal in maintaining biodiversity of aquatic plants in landscapes**

2007 : \$ 55,000

2008 : \$ 110,000

2009 : \$ 110,000

2010 : \$ 55,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Parks Victoria

National Herbarium of Victoria, Royal Botanic Gardens

Department of Sustainability and Environment

Department of Sustainability and Environment

West Gippsland Catchment Management Authority

Australian Ecosystems

Gippsland Coastal Board

East Gippsland Catchment Management Authority

Administering Organisation Monash University

Project Summary

Aquatic plants improve water quality and provide habitat for aquatic animals, which underpin industries such as tourism and commercial fisheries critical to economies in regional areas and across Australia. Preserving plant biodiversity of aquatic ecosystems is vital to preserve these benefits. Dispersal plays a critical role in maintaining plant biodiversity and requires understanding at landscape scales. This project will identify appropriate approaches for the conservation of plant biodiversity in aquatic ecosystems through an improved understanding of the contribution of wind, water and waterbirds in the dispersal of aquatic plants. This project will also identify water flow regimes that promote a diverse and sustainable aquatic flora.

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LP0776818 Prof AB Markus; Dr J Goldlust; Dr N Jacobs

Approved Project Title **Understanding identity, social change and emerging needs: Melbourne's Jewish community and Australian society**

2007 : \$ 36,628

2008 : \$ 67,227

2009 : \$ 58,727

2010 : \$ 28,128

Primary RFCD 3701 SOCIOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Jewish Care

Administering Organisation Monash University

Project Summary

Understanding current developments within ethnic and religious groups is of vital national importance. The detailed profile of Australian ethno-religious groups to be produced will be of relevance to a range of planning issues, including: strategies to maximize the life potential of young Australians, preventative health care, appraisal of future needs of an ageing population and of the capacity of voluntary agencies to maintain their existing levels of social welfare provision. Integral to the project is ongoing consultation with communal leaders, social workers and policy makers. It will provide for informed public discussion and promote a climate of consultation and dialogue.

LP0776690 A/Prof LN Moresi; Prof MA Sandiford; Dr W Powell; Dr GD Karner

Approved Project Title **Three dimensional computational models of geological basin and hinterland evolution incorporating lithospheric mantle and surface processes**

2007 : \$ 45,000

2008 : \$ 90,000

2009 : \$ 85,000

2010 : \$ 40,000

Primary RFCD 2601 GEOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

ExxonMobil Upstream Research Company

Administering Organisation Monash University

Project Summary

Petroleum exploration in deepwater areas offshore Australia is becoming increasingly important as more accessible, shallow water oil reserves near exhaustion. Geological simulation is an important tool for understanding deep water basins where geophysical imaging techniques are less effective. This project will develop 3D computational models relevant to understanding the development and evolution of geological basins and the sediments that fill them. The models will be integrated with available offshore data for potentially prospective Australian basins in the Northwest Shelf and the Southern Australian margin.

LP0776674 Prof J Rossjohn; Dr AF Wilks

Approved Project Title **Rational structure-based drug design of protein tyrosine kinase inhibitors**

2007 : \$ 86,168

2008 : \$ 179,704

2009 : \$ 201,217

2010 : \$ 107,682

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating/Partner Organisation(s)

Cytopia Ltd

Administering Organisation Monash University

Project Summary

This research project is focussed on understanding the physiological roles of a group of enzymes within the cell, as well as developing therapeutics to combat significant diseases. It will achieve this by developing compounds to enzymes that are implicated in the disease process. The research project represents a continuation of a collaboration between academic researchers at Monash University, and an Australian biotechnology company, Cytopia Ltd.

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LP0776322 Dr PJ Sunnucks; Dr JQ Radford; Dr JE Melville; Dr LG Joseph; Dr GR Newell

Approved Project Title **How much habitat and what configuration maintains natural levels of connectivity in southeast Australian native birds?**

2007 : \$ 92,066

2008 : \$ 185,681

2009 : \$ 146,547

2010 : \$ 52,932

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Museum Victoria

Department of Sustainability & Environment

Department of Primary Industries

Parks Victoria

North Central Catchment Management Authority

Goulburn Broken Catchment Management Authority

Administering Organisation Monash University

Project Summary

Maintenance of biodiversity is fundamental to ecologically sustainable development. This project will deepen our understanding of the consequences of landscape change for native birds and enhance our national capacity to integrate nature conservation and agricultural production. We will contribute to sustainable use of rural landscapes by providing land managers with greater understanding of (1) how and why landscape change affects bird species diversity and persistence, (2) which components of the landscape can most effectively be manipulated to enhance population survival, and (3) estimating the long-term effects of habitat fragmentation on the population structure and function of species.

LP0776491 Prof OK Tam; A/Prof J Chen; Prof JM Godfrey; Prof G Palmer

Approved Project Title **Improving Corporate Governance in China's Largest 166 State-Owned Central Enterprise Groups**

2007 : \$ 25,000

2008 : \$ 52,000

2009 : \$ 49,446

2010 : \$ 22,446

Primary RFCD 3402 APPLIED ECONOMICS

Collaborating/Partner Organisation(s)

China Finance Association, Ministry of Finance, People's Republic of China

Administering Organisation Monash University

Project Summary

This is a pioneering study that takes advantage of a unique research opportunity for Australian researchers to be at the forefront of research in the corporate governance of China's largest 166 state-owned central enterprises with which the Australia business sector is increasingly engaged in both trade and investment.

The project will allow Australians to play a leading role in shaping a major reform in our second most important trading partner and will enhance Australian knowledge of impending trends in strategic areas of mutual interest. It will arm Australia with greater understanding of its many faceted engagements with China.