

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

Queensland

The University of Queensland

LP100200482 Prof Damian J Barrett, Prof Stuart R Phinn

Approved Project Title **Restoring ecosystem function in altered landscapes to achieve ecologically sustainable development goals**

2010 \$40,000.00

2011 \$80,000.00

2012 \$40,000.00

2013

2014

2015

Primary FoR 0502 ENVIRONMENTAL SCIENCE AND MANAGEMENT

Partner/Collaborating Organisation(s)

Australian Coal Research Ltd

Administering Organisation The University of Queensland

Project Summary

Mining and agriculture contribute approximately 10 per cent of Australia's gross domestic product. Hence the sustainable development of these sectors is critical to our long term economic growth and well being. However, this growth is leading to degradation of landscape ecosystem function and loss of ecosystem services. Community reaction will curtail production in these sectors where function and services continue to be lost. This project addresses the demand for accurate scientific information, needed by industry and government, to understand ecosystem responses to change, and to develop optimal conservation interventions that take account of the costs and benefits in landscapes where the intensive mining industry intersects with extensive land uses for food and fibre production.

LP100200822 Prof Paul Burn, Prof Paul Meredith

Approved Project Title **A portable sensor for explosives**

2010 \$35,850.00

2011 \$75,000.00

2012 \$39,150.00

2013

2014

2015

Primary FoR 1007 NANOTECHNOLOGY

Partner/Collaborating Organisation(s)

Arborescent 2 Ltd

Administering Organisation The University of Queensland

Project Summary

The National Research priority, safeguarding Australia, recognises that there is a real threat of terrorism and the need to protect Australians at home and abroad. Although there is often talk of dirty bombs, and biological and nuclear terrorism, the most easily sourced weapon of the terrorist is still the conventional explosive. The ability to detect trace amounts of explosives is therefore required. This means that there is a real need for a portable detection system with the ability to reliably sense a specific explosive selectively at low concentrations. This project concerns the development of a new handheld sensor that has the potential to increase the nation's security.

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LP100200504 Prof Matthew A Cooper, Dr Catriona L McElnea, Dr Chang-Yi Huang

Approved Project Title **Next generation dengue diagnostics**

2010	\$35,000.00
2011	\$75,000.00
2012	\$77,500.00
2013	\$37,500.00
2014	
2015	

Primary FoR 0304 MEDICINAL AND BIOMOLECULAR CHEMISTRY

Partner/Collaborating Organisation(s)

Inverness Medical Innovations Australia Pty Ltd

Administering Organisation The University of Queensland

Project Summary

The 2009 dengue epidemic was widespread and the largest in North Queensland for 50 years. The outbreak was not quickly contained despite an extensive education program and a mosquito control taskforce. All four types of Dengue were detected, greatly increasing the chance of more severe complications such as Dengue haemorrhagic fever and Dengue shock syndrome. This project will improve our knowledge of Dengue proteins used in tests to diagnose the virus. The new knowledge will be used to develop an easy to use test to diagnose Dengue infection early, rapidly and accurately. Effective diagnosis of Dengue will then allow timely implementation of intervention strategies (mosquito control, public advice, isolation and care).

LP100200422 Prof Stuart Crozier, Dr Craig M Engstrom, A/Prof Olivier Salvado, Dr Lars O Lauer, Dr Raphael Schwarz, Dr Jurgen Fripp

Approved Project Title **Automatic cartilage segmentation in magnetic resonance imaging**

2010	\$100,000.00
2011	\$185,000.00
2012	\$170,000.00
2013	\$85,000.00
2014	
2015	

Primary FoR 0801 ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING

APAI 1

Partner/Collaborating Organisation(s)

Siemens Aktiengesellschaft

Administering Organisation The University of Queensland

Project Summary

Osteoarthritis (OA) is the most common form of arthritis, affecting nearly 1.4 million Australians. This research aims at engineering new tools for use in Magnetic Resonance Imaging systems to enable automated analyses of the cartilage and bones in joint images. The goals of the work are to assist with improved diagnosis and treatment planning for both chronic disease, such as OA, and acute injuries, such as cartilage and ligament tears in sporting injuries and other traumas.

The software developed will be provided on the project's partner (Siemens) platform and will therefore be available worldwide and have a consequently large impact on the field.

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LP100200276	Prof Beate I Escher, Dr Peta A Neale, Dr Wolfgang Gernjak, Dr Alice A Antony, A/Prof Gregory L Leslie, A/Prof Jorg E Drewes, Dr Cedric Robillot, Mr Yvan P Poussade	
Approved Project Title	Fate of micropollutants in water recycling: influence of dissolved organic matter	
2010		\$41,000.00
2011		\$89,000.00
2012		\$88,091.00
2013		\$40,091.00
2014		
2015		
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

APDI Dr Peta A Neale

Partner/Collaborating Organisation(s)

Queensland Manufactured Water Authority, Veolia Water Australia, Water Quality Research Australia Ltd

Administering Organisation The University of Queensland

Project Summary

Access to safe drinking water is essential for the economic and social development of Australia. There is increasing interest in applying advanced water treatment processes, such as membrane filtration or ozonation, to treat secondary effluent to a potable standard. This project promotes improved organic pollutant removal and monitoring during advanced water treatment and will contribute to the National Research Priority goal, water - a critical resource, by providing the increased protection of receiving waters including rivers and seawater. Further, as very few studies consider the role of dissolved organic matter for organic pollutant fate in water reuse internationally, this project will help to advance Australia's position in science.

LP100200418	Dr Richard A Fuller, Dr Howard B Wilson, Prof Hugh P Possingham, A/Prof Bruce E Kendall	
Approved Project Title	Understanding and reversing the rapid declines in Australia's shorebirds	

2010		\$75,000.00
2011		\$147,500.00
2012		\$130,000.00
2013		\$57,500.00
2014		
2015		
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

APAI 1

Partner/Collaborating Organisation(s)

Birds Queensland, Department of the Environment, Water, Heritage and the Arts, Port of Brisbane Corporation, QLD Department of Environment and Resource Management

Administering Organisation The University of Queensland

Project Summary

Migratory shorebirds are recognised under the Environment Protection and Biodiversity Conservation Act as nationally important assets, and these birds are iconic elements of many coastal landscapes, yet they are declining at an alarming rate. Due to their migratory nature, part of the reason for their decline might lay in Australia, but part might lay elsewhere across the 23 countries in the migratory flyway. This project will discover what Australia can do within its territory to reverse shorebird declines, and how international agreements and policy positions could be strengthened to achieve shorebird conservation in the East Asian flyway. This research will deliver the science necessary to recover a matter of national environmental significance.

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LP100200730	Prof Suzanne D Golding, Prof Victor Rudolph, Prof Joan S Esterle, Dr Paul Massarotto, Dr Gene W Tyson, Dr Patrick C Gilcrease	
Approved Project Title	Coals as methane bioreactors: significance of microbial methane generation in coal seams for coal seam gas (CSG) production and carbon dioxide (CO2) geosequestration	
2010		\$65,000.00
2011		\$110,000.00
2012		\$100,000.00
2013		\$55,000.00
2014		
2015		
Primary FoR	0403	GEOLOGY

APAI 1

Partner/Collaborating Organisation(s)

QGC, Santos Ltd (Qld), South Dakota School of Mines and Technology

Administering Organisation The University of Queensland

Project Summary

Australian coal seam gas, for domestic and export use, potentially rivals coal mining in national wealth creation. This project aims to demonstrate that coal seams can function as bioreactors, using naturally present micro-organisms to generate methane. The methane could come from injection of carbon dioxide (CO2) into the coal, creating a sustainable supply of clean burning gas by converting the CO2 into methane. A successful outcome will permit the reuse of wells and associated infrastructure, significantly increasing coal seam methane production and reserves, possibly several fold, as well as reducing the cost of their recovery. The project will investigate the geological, microbiological and engineering requirements to accomplish this.

LP100200223	Prof Jurg Keller, Dr Rene A Rozendal, Dr Korneel Rabaey, Mr Yvan P Poussade, Dr Cedric Robillot	
Approved Project Title	Iron and phosphorus recovery from ferric precipitation sludge	

2010		\$45,000.00
2011		\$95,000.00
2012		\$105,000.00
2013		\$55,000.00
2014		
2015		
Primary FoR	0904	CHEMICAL ENGINEERING

APAI 1

Partner/Collaborating Organisation(s)

Queensland Manufactured Water Authority, Veolia Water Australia

Administering Organisation The University of Queensland

Project Summary

To minimise health risks and environmental pollution, water and wastewater treatment processes often use iron salts to eliminate phosphate and other pollutants. This generates large amounts of chemical sludge that is typically sent to landfill. The benefits of this new process will be the recovery of both the iron, which can be reused in the process, and the phosphate, which is a key component in fertiliser. Since phosphate is a limited natural resource with an increasingly high value, the recovery and recycling of this critical element in food production is highly important. The process will also avoid a large part of the sludge production and will make the water treatment processes more cost-effective.

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LP100200841	Prof Robert L Lingard, Prof Marie T Brennan, Dr Lew Zipin, Prof Peter D Renshaw, Prof Martin D Mills	
Approved Project Title	Pursuing equity in high poverty rural schools: improving learning through rich accountabilities	
2010		\$49,000.00
2011		\$99,000.00
2012		\$116,500.00
2013		\$94,000.00
2014		\$27,500.00
2015		
Primary FoR	1301	EDUCATION SYSTEMS

APAI 1

Partner/Collaborating Organisation(s)

Queensland Department of Education and Training

Administering Organisation The University of Queensland

Project Summary

Poor performance of students in schools located in high poverty communities is a pressing educational problem for Australia, with educational disadvantage in poor rural communities in particular demanding amelioration. The evidence suggests the equity and quality of schooling outcomes are centrally important to the nation's economic future, the strength of Australian democracy, social inclusion and a unified nation. In strengthening policy and practice knowledge about educative usage of performance data and the development of rich forms of accountability, the research will advance the academic literature and provide an evidence base for success of the national partnership on low socio-economic status schools.

LP100200349	A/Prof Jayne C Lucke, Dr Deborah J Loxton, Prof Christina Lee, Prof Annette J Dobson, Prof Ian S Fraser, Dr Edith Weisberg	
Approved Project Title	A longitudinal study of patterns of contraception use and access to contraceptive information, advice and services for young Australian women	
2010		\$41,575.50
2011		\$96,248.00
2012		\$101,725.50
2013		\$47,053.00
2014		
2015		
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

Partner/Collaborating Organisation(s)

Bayer Australia Ltd, Family Planning NSW

Administering Organisation The University of Queensland

Project Summary

This study will inform the design of contraceptive education and service delivery, particularly to young women in rural areas, in collaboration with industry partners; Family Planning NSW and Bayer HealthCare. Improved education and access, leading to increased control of fertility, will contribute to the development of stronger families and stronger communities, while reducing the personal, social and economic costs of unplanned pregnancies.

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LP100200159	Dr Catherine A Pattenden, Dr Polly H Parker, Prof Janeen H Baxter, Prof David J Brereton, Prof Kathy E Kram	
Approved Project Title	Women in non-traditional careers: a longitudinal study of female professionals in the mining and resources industries	
2010		\$40,000.00
2011		\$70,000.00
2012		\$70,000.00
2013		\$40,000.00
2014		
2015		
Primary FoR	1608	SOCIOLOGY

APAI 1

Partner/Collaborating Organisation(s)

BHP Billiton Ltd, Minerals Council of Australia, Queensland Resources Council, Rio Tinto, The Australasian Institute of Mining and Metallurgy, Xstrata Copper

Administering Organisation The University of Queensland

Project Summary

This project is in line with National Research Priority, strengthening Australia's social and economic fabric, which identifies the importance of research on workforce participation. The main aim of this research is to increase the attraction, participation, development and most importantly, retention of qualified female technical staff in the Australian resource industry. Analysis of project outputs will directly inform policies and practices to redress the significant skill shortages in the industry. Furthermore enhancing workplace diversity is necessary to create effective and innovative workplaces that reflect the diversity of the broader Australian society.

LP100200475	Prof Helen Ross, Dr Wolfram H Dressler, Dr Sylvie Shaw, Dr Helen Johnson, Dr David Rissik	
Approved Project Title	Monitoring and evaluating Moreton Bay and its catchments as a socio-ecological system	
2010		\$42,998.50
2011		\$80,399.00
2012		\$81,894.50
2013		\$44,494.00
2014		
2015		
Primary FoR	1601	ANTHROPOLOGY

Partner/Collaborating Organisation(s)

QLD Department of Environment and Resource Management, South East Queensland Healthy Waterways Partnership, South East Queensland Traditional Owners Alliance Ltd

Administering Organisation The University of Queensland

Project Summary

This project will identify how to include social and cultural analysis into protected area management arrangements, to enhance the protection of Moreton Bay Marine Park and other marine and land protected areas. It will integrate catchment with ocean, and social with biophysical sciences and economics towards a monitoring and evaluation framework that informs management by government, government-community partnerships and traditional owners. It will build capacity in linking catchment and marine areas, provide social analysis that is highly valuable to management and communications strategies, and combine Indigenous with non-Indigenous knowledge systems to highlight differing cultural values and ways of protecting waterways.

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LP100200107	Dr Naomi Stead, A/Prof Julie L Willis, Prof Sandra Kaji-O'Grady, A/Prof Gillian M Whitehouse, Prof Susan Savage, Ms Justine Clark, Dr Karen L Burns, Dr Amanda M Roan	
Approved Project Title	Equity and diversity in the Australian architecture profession: women, work, and leadership	
2010		\$25,750.00
2011		\$61,750.00
2012		\$70,500.00
2013		\$34,500.00
2014		
2015		
Primary FoR	1201	ARCHITECTURE

APAI 1

Partner/Collaborating Organisation(s)

Architecture Media, Bates Smart Architects, BVN Architecture, PTW Architects, The Australian Institute of Architects

Administering Organisation The University of Queensland

Project Summary

This project will develop strategies to maximize women's participation in architecture, improving human resource practices within architectural firms and developing a diversity policy for the national professional association. Together these outcomes will increase women's representation within architecture, and help all architects achieve a greater work life balance with its concomitant effects of improving individual health, wellbeing and national productivity. Increasing the visibility and recognition of female architects will directly support innovative practice in architecture, which will advantage all attempts to create socially and ecologically sustainable built environments in Australia.

LP100200215	A/Prof Christina E van Kraayenoord, Prof Robyn M Gillies, Dr Eileen M Honan, A/Prof Karen B Moni, Prof Mark C Western, Prof David J Brereton	
Approved Project Title	Supporting schools and teachers to improve students' reading achievement in rural communities	
2010		\$58,154.00
2011		\$118,002.00
2012		\$132,418.00
2013		\$116,520.50
2014		\$43,950.50
2015		
Primary FoR	1302	CURRICULUM AND PEDAGOGY

Partner/Collaborating Organisation(s)

BHP Billiton Mitsubishi Alliance, Education Queensland

Administering Organisation The University of Queensland

Project Summary

This project focuses on improving student reading achievement in rural and mining communities and developing school-community links around reading. The project will deliver lasting benefits that include: raising the literacy standards of Australia's students and its future citizens and employees; maintaining a knowledgeable and effective teaching workforce in rural and mining communities; developing a sustainable professional learning program that can be used in education systems nationally and internationally; providing empirical data on the efficacy of strategies for reading instruction and intervention; and creating reading-related connections among schools, communities and mining companies that are positive and empowering.

