Queensland

The University of Queensland

DP0773687 Dr UR Abeyratne; Dr C Hukins; Prof Y Kinouchi

Approved Project Title **Non-contact Instrumentation for the Home Monitoring of Upper Airway Obstructions in Sleep**

2007 : $52,000
2008 : $52,000
2009 : $27,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

Administering Organisation The University of Queensland

Project Summary

Over 800,000 Australians suffer from obstructive sleep apnoea costing billions of dollars annually to the nation. Obstructive sleep apnoea patients use twice the health resources compared to a normal person, and 7 times more likely to cause traffic accidents. In NSW alone up to 43000 accidents per year are due to obstructive sleep apnoea. Obstructive sleep apnoea is treatable and thus consequences such as stroke and heart attacks are preventable. At present over 90% patients remain undiagnosed. Current diagnosis is expensive and requires hospitalization; no acceptable mass screening device exists. This project proposes an enabling technology for the population screening of obstructive sleep apnoea based on analysing snoring sounds. Outcomes of the project have the potential to revolutionize the diagnosis of obstructive sleep apnoea.

DP0770884 Prof DJ Adams; Prof PF Alewood; Prof DJ Craik

Approved Project Title **Alpha-Conotoxins: Selective Probes For Nicotinic Receptor Subtype Structure And Function**

2007 : $345,000
2008 : $325,000
2009 : $320,000

Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Administering Organisation The University of Queensland

Project Summary

Marine snails from the waters off the Australian coast produce an amazing variety of mini-proteins in their venoms called conotoxins that they use to capture prey. These conotoxins bind very specifically to receptors in our body associated with the transmission of nerve signals. We will use natural and synthetically modified conotoxins to selectively block particular types of neuronal 'receptors' to gain a greater understanding of how the nervous system functions. This knowledge will help in the design of new drugs to treat a variety of diseases and disorders. Essentially we will use a chemical armoury developed by the cone snail to design state-of-the-art mini-protein drugs.

DP0771661 Prof NM Ashkanasy; Prof CE Hartel; Prof J Greenberg

Approved Project Title **The role of organisational events and emotions in strategic decision-making**

2007 : $76,000
2008 : $81,000
2009 : $79,000

Primary RFCD 3801 PSYCHOLOGY

Administering Organisation The University of Queensland

Project Summary

Australia's international competitiveness depends to a large extent on the effectiveness of its business organisations. This effectiveness depends, in turn, on the quality of top managers' decision-making. Thus, understanding the way that managers make decisions is of critical importance if we are to develop programs to improve the competitiveness of Australian business organisations. The Australian researchers involved in this grant application have been at the forefront of the international movement to include the study of emotions in organisational research. In a series of four projects, they combine with a noted US scholar, who specialises in the study of organisational justice, to study the decision-making patterns of top managers.

DP0774201 A/Prof SR Bell; Dr H Feng

Approved Project Title **From Periphery to Central: the Politics of China's Central Banking Reform and the Building of a Financial Infrastructure in an Age of Transition**

2007 : $90,000
2008 : $90,000
2009 : $80,000

Primary RFCD 3499 OTHER ECONOMICS

APD Dr H Feng

Administering Organisation The University of Queensland

Project Summary

China's rapid economic growth and gradual integration with the international system, in particular the increasingly strong economic links between Australia and China, means Australia now has a big stake in China's financial and economic stability. By explaining the dynamics of China's central banking reform, monetary policy and banking reform since 1979, this project will significantly enhance our capacity to interpret monetary policy management and financial development in China, to support our commitment to states in the Asia Pacific region that are dealing with economic reforms and transition, and more importantly, to exert influence on the desired direction of change in China through engagement with the Chinese monetary authority.

DP0773027 A/Prof PV Bernhardt; Prof DR Richardson

Approved Project Title **Chemical and Biochemical Characterisation of Novel Iron Chelators with Therapeutic Potential**

2007 : $200,000
2008 : $205,000
2009 : $210,000

Primary RFCD 2502 INORGANIC CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

Resistance by cancers to established chemotherapeutics is a growing problem in the community and one that demands the development of new strategies. Chelators that target the essential element iron within cancer cells represent a novel and promising approach to this problem. The Chief Investigators represent a unique combination of expertise in coordination chemistry and the biochemistry of iron chelation. They have discovered and characterised new chelators that show marked anticancer activity, and act by a new mechanism that overcomes problems of resistance. In this project they will pursue a course that will lead to a greater understanding of how these compounds work with the outcome that new effective anticancer drugs may emerge.

DP0771344 Prof SK Bhatia

Approved Project Title **Development and structural characterisation of carbide-derived carbon membranes and their application in separation**

2007 : $125,000
2008 : $100,000
2009 : $105,000

Primary RFCD 2506 THEORETICAL AND COMPUTATIONAL CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

This research addresses a key challenge in gas separation crucial to our energy future and environmental sustainability, while harnessing the potential of carbide derived carbons. The project has a multitude of benefits for Australia, not only because it contributes to on-going research on carbon dioxide sequestration and utilization of alternate fuels, but because it will see a new generation of Australian researchers trained in multidisciplinary cutting-edge research while addressing several areas of national priority, including reducing emissions, breakthrough sciences, development of frontier technologies and advanced materials, and thereby creating new opportunities for industry.

DP0773082 Prof ME Bialkowski

Approved Project Title **Microwave System for Breast Cancer Detection**

2007 : $48,000
2008 : $40,000
2009 : $39,000

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

Administering Organisation The University of Queensland

Project Summary

Breast cancer is the most common cancer diagnosed in women in various parts of the world. Currently the primary method for breast screening is X-ray mammography and in rare cases Magnetic Resonance Imaging. X-ray mammography has saved many lives, but the technology still produces a relativity high number of false negative and false positive diagnoses. In the last decade, active microwave techniques have attracted considerable interest as viable alternatives to X-ray mammography. This project aims at the design and development of a low-cost microwave system, which will complement X-ray mammography as a breast cancer diagnosis tool.

DP0773857 Prof LL Blackall; Prof CR Johnson; Dr RG Beiko

Approved Project Title **Metagenomics and the genetic basis of ecology and evolution of communities - complex microbial communities in industrial processes as excellent paradigms**

2007 : $175,000
2008 : $160,000
2009 : $150,000

Primary RFCD 2703 MICROBIOLOGY

Administering Organisation The University of Queensland

Project Summary

Benefits accrue on two fronts: the international reputation of Australian science in contributing significantly to two new, challenging and highly topical questions in ecology and evolution, and in pioneering a route to better efficiency and control of an important industrial process. Wastewater is rich in organic phosphorus that is damaging to the environment if untreated, but current understanding enables only rudimentary control of the microbial communities that are the basis of the treatment process. The work will provide unprecedented insight into the mechanisms underpinning the dynamics of phosphorus absorbing microbes in industrial facilities by integrating from gene-to-ecosystem.

DP0769995 A/Prof MW Blows; Dr E McGraw

Approved Project Title **The Genomic Dimensionality of the Response to Natural Selection**

2007 : $80,000
2008 : $80,000
2009 : $80,000

Primary RFCD 2702 GENETICS

Administering Organisation The University of Queensland

Project Summary

Many future advances in agriculture and medicine, as well as an understanding of adaptive evolution in natural and pest populations will require discovering the genes that regulate the expression of complex traits. Microarray technology is at the forefront of modern genomics, but despite its promise, is currently restricted in its utility by significant analytical problems associated with the analysis of the large number of gene expression profiles and their interpretation. Analytical approaches will be developed that will substantially enhance the ability of transcriptional profiling to effectively uncover key genes underlying important phenotypes of interest across the biological and medical sciences.

DP0772145 A/Prof JR Botella; Prof RA Bressan

Approved Project Title **Establishing the role of heterotrimeric G-proteins in plant defence**

2007 : $90,000
2008 : $88,000
2009 : $85,000
Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation The University of Queensland

Project Summary

Agriculture is an important economic activity in Australia that resulting in considerable export revenues. Agricultural losses caused by plant pathogens account for millions of dollars every year and have profound economic and social implications.
The proposed research will explore new approaches to increase plant resistance to pathogens using a previously unkown component of this network: G-proteins and could ultimately reduce dependency on toxic chemical products.

DP0770302 Prof AW Boyd

Approved Project Title **Regulation of the EphA3 receptor tyrosine kinase in vertebrate development**

2007 : $90,000
2008 : $88,000
Primary RFCD 2702 GENETICS

Administering Organisation The University of Queensland

Project Summary

The Eph/ephrin system has a critical role in normal embryonic development. Amongst vertebrates, the EphA3 gene is one of the most highly conserved genes in this system with critical roles in development of the visual system and in other developmental processes. Understanding how this gene is regulated will help us to understand the critical role of EphA3 in the basic biology of humans and other animals. This knowledge may also shed light on the basis of congenital abnormalities and other pathological processes and possibly help us to understand how to prevent or treat these conditions.

DP0770081 Prof TJ Brailsford; Prof RD Terrell; Prof TJ O'Neill; Prof T Smith; Prof A Chen; Dr J Penm

Approved Project Title **Complexity, Risk Management and Dynamic Portfolio Selection in Investment Management using Advances in Evolutionary Parallel-computing Artificial Intelligence**

2007 : $115,000
2008 : $115,000
2009 : $115,000
Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT

Administering Organisation The University of Queensland

Project Summary

With over $1 trillion of investors' monies in the hands of fund managers, the health of the Australian economy is critically dependent on the investment decisions of these managers. However, the majority of the funds are invested in risky assets with histories of volatile price movements about which we do not possess a deep understanding. This project draws upon a set of inter-disciplinary concepts and models centred in neural networks that allow for learning over time to advance our understanding of complexity, leading to superior quantitative tools and models to allow for improved decision-making in respect of risk management and asset allocation.

DP0772840 Dr DJ Brown

Approved Project Title **Descartes' Ontology of Everyday Life**

2007 : $39,294
2008 : $37,294
2009 : $34,294

Primary RFCD 4401 PHILOSOPHY

Administering Organisation The University of Queensland

Project Summary

Australia has a strong international reputation in philosophy and the history of philosophy. This project will contribute to our standing in the international community of scholars and to the teaching of Australian students in the historical origins of contemporary ideas and problems. It will furthermore contribute to the growing recognition of early modern interdisciplinary studies within Australia by drawing on ideas from the history of science, early modern philosophy, medieval philosophy and the history of early modern thought and ideas.

DP0770400 Dr DE Bryant

Approved Project Title **Cycle decompositions of graphs**

2007 : $87,000
2008 : $87,000
2009 : $87,000
2010 : $87,000
2011 : $87,000

Primary RFCD 2301 MATHEMATICS

QEII Dr DE Bryant

Administering Organisation The University of Queensland

Project Summary

The benefits to Australia of fundamental research in core disciplines such as mathematics are well documented. This project aims to solve long-standing and significant open problems in the field of mathematics known as graph theory. Solving such problems will undoubtedly bring Australian research in this field to the fore, and help to enhance Australia's international research profile generally. The project offers substantial postgraduate training in the form of three excellent PhD projects in discrete mathematics. The computer age has ensured that this is a booming discipline and an increasing component of undergraduate syllabi around the world. It is thus a crucial area in which to be providing quality research training.

DP0771387 Dr YM Buckley; A/Prof R Nathan; Dr D Westcott; Prof CH Godfray

Approved Project Title **How do characteristics of seeds and landscape heterogeneity determine plant spread in new environments?**

2007 : $170,000
2008 : $160,000
2009 : $180,000
2010 : $140,000
2011 : $140,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

ARF Dr YM Buckley

Administering Organisation The University of Queensland

Project Summary

Climate change and exotic invasions are among the greatest threats to Australia's, and the world's, biodiversity. Under a rapidly changing climate many Australian plant species will have to spread across a fragmented landscape to persist. In order to contain or eradicate invasive plant species we need to know how they will spread in novel landscapes. We will develop models which will be used for invasive plants to predict ecological and evolutionary responses to novel landscapes and novel dispersers and for native plants to predict their spread in to fragmented landscapes. These models can be used to prioritise management actions for species of most conservation concern, and predict how far and fast invasive species will spread.

DP0773689 Dr RW Butler

Approved Project Title **A Non-National History of Australian Art**

2007 : $47,676
2008 : $48,650
2009 : $35,260
Primary RFCD 4199 OTHER ARTS

Administering Organisation The University of Queensland

Project Summary

With their emphasis on national identity, the existing accounts of Australian art remain stuck in the 19th century. In a time of increased globalisation and international co-operation, it is worth remembering that Australian art has long been part of the wider community. This new history of Australian art seeks to recount a long and confident history of artistic collaboration between Australia and the rest of the world. It thus seeks to provide a new understanding of ourselves and a refutation of the long-running notion of cultural cringe, which can only be maintained -- in the visual arts, at least -- in denial of the historical record.

DP0774348 Prof JH Campbell; Dr Y Cao; Mr TI Croll; Mr MR Doran

Approved Project Title **Tissue Engineering the Meniscus: Combining Novel Biomimetic Hybrid Scaffolds with Adult Stem Cells**

2007 : $150,000
2008 : $140,000
2009 : $140,000
Primary RFCD 2915 BIOMEDICAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

Development of a meniscal implant ex vivo will provide significant health and economic benefits, given that worldwide, millions of people annually suffer from meniscus damage or loss. We believe that a tissue engineered meniscus, composed of a novel biomimetic scaffold which guides the differentiation of mesenchymal stem cells in a novel bioreactor will provide a solution to the problem of donor scarcity in meniscal repair. Success in this project will lead directly to large-animal studies and clinical trials. The training of four early careeer researchers involved in this project will also be of significant benefit to the Australian Tissue Engineering and Biomaterials community.

DP0771376 Prof DJ Carter

Approved Project Title **America Publishes Australia: Australian Books and American Publishers, 1890-2005**

2007 : $101,195
2008 : $98,404
2009 : $56,539
Primary RFCD 4202 LITERATURE STUDIES

Administering Organisation The University of Queensland

Project Summary

Research into the commercial and cultural links between American publishers and Australian writers will reveal a new dimension of the nation's relationship to its most important cultural trading partner. By focusing on a neglected area of Australian publishing history, the project will also contribute significantly to our understanding of the changing circumstances within which Australian writers and publishers have worked. Publishing remains under-researched compared to other cultural industries in Australia, despite its significance both culturally and economically.

DP0772679 Dr SF Chenoweth; Dr R Bonduriansky

Approved Project Title **The Genetic Basis of Differences Between the Sexes**

2007 : $177,000
2008 : $165,000
2009 : $172,000
2010 : $162,000
2011 : $162,000

Primary RFCD 2702 GENETICS

ARF Dr R Bonduriansky

Administering Organisation The University of Queensland

Project Summary

Improved medical interventions against genetic disorders like cancer are made possible by advances in fundamental understanding of gene function and, especially, genetic mechanisms (like genomic imprinting) that are directly implicated in these disorders. Furthermore, an understanding of environmental effects within and across generations is vital in an age of global climate change. Recent theory and evidence suggest that research on sexually dimorphic traits may hold a key to a better understanding of these phenomena. The proposed research will strengthen Australia's position as leader in evolutionary genetics, enhance knowledge of native fauna, and improve our understanding of biological phenomena that affect human health.

DP0774669 Dr WP Clarke; Dr MC Duke

Approved Project Title **Hydrogen production from the anaerobic digestion of organic waste using a novel membrane**

2007 : $130,000
2008 : $100,000
2009 : $100,000

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

Solid organic waste is a potentially large, decentralized and sustainable source of hydrogen. The potential hydrogen yield from the anaerobic digestion of solid organic waste in Sydney alone could power over 750,000 passenger vehicles. Hydrogen is always generated in the digestion of organic material, but under natural conditions it is scavenged by methanogens. Recently developed silica membranes are selectively and highly permeable to hydrogen, and these can be used to draw hydrogen from the digester. The digester will be run at high temperatures (>65oC) because this favours organisms that produce hydrogen over methanogens. Anaerobic digesters are well established in Europe and at least 3 municipal plants already exist in Australia.

DP0770446 Dr CJ Clarkson

Approved Project Title **The African origins of Asian and Australian lithic technologies: Exploring modern human origins and dispersals using new techniques of core analysis**

2007 : $107,030
2008 : $97,030
2009 : $100,030

Primary RFCD 3703 ANTHROPOLOGY

APD Dr CJ Clarkson

Administering Organisation The University of Queensland

Project Summary

This project will demonstrate that Australia is committed to understanding the origins of modern humans and solving research problems within and beyond our geographic region. The history of modern human evolution in Africa has significant implications for the origins of the first Australians, Indians and Asians and will contribute to an understanding of our shared and recent common ancestry and the emergence of human diversity. Australian archaeological innovations, especially when applied to global issues such as human evolution, will continue to showcase Australian scientific expertise and achievements. The study of problem-solving and technological innovation will help understand the sophisticated nature of early Australian peoples.

DP0772168 Prof TB Cornwell; Prof MS Humphreys

Approved Project Title **Effective Marketing Communication: Pre-existing Knowledge Structures and Contextual Effects**

2007 : $88,000
2008 : $110,000
2009 : $88,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

Administering Organisation The University of Queensland

Project Summary

Applied findings in the area of sponsorship-linked marketing communications would support business, government and sponsored activities such as sport, art, and charity. Findings will also enhance the reputation of research in cognition and in business. Execution of the research will provide a national benefit by affording the opportunity of experience and training to a research associate as well as any PhD or honours students affiliated with the project. Further, application of the research findings will result in smart information use in an industry setting, where sponsors and events organisers stand to benefit from marketing campaigns that promote their messages more efficiently.

DP0774643 Dr MT Davis; A/Prof DF Lemmings

Approved Project Title **The Courtroom, Lawyers and the Press: Negotiating Justice in the Age of the Public Sphere**

2007 : $108,000
2008 : $54,000

Primary RFCD 4301 HISTORICAL STUDIES

Administering Organisation The University of Queensland

Project Summary

The origins of modern Australian systems of justice are derived from institutions and cultures developed in Britain, and this project will contribute a deeper understanding of their nature and provenance. It will illuminate the roots of the modern trial as an instrument of governance that involves largely symbolic, rather than substantive, popular participation, and trace its equally significant role as a form of popular entertainment. Besides their obvious relevance to questions about active citizenship in modern Australia, scholarly studies of these issues will contribute in a major way to Australia's international reputation for producing high-quality scholarly contributions to British studies.

DP0772241 Prof BM Degnan

Approved Project Title **The sponge genome project and the evolution of multicellularity: using comparative genomics and developmental biology to reconstruct the first animals**

2007 : $120,000
2008 : $115,000
2009 : $110,000

Primary RFCD 2702 GENETICS

Administering Organisation The University of Queensland

Project Summary

Recently the entire genome from a living fossil - a sponge from the Great Barrier Reef - was sequenced (jointly supported by the ARC and US Department of Energy). As this genome is assembled and analysed, many of the fundamental biological processes that underlie the construction and evolution of all animals, including humans, will be revealed. In addition, sponge genomics will fuel innovations in medicine and biotechnology. Specifically, sponges are renowned for their capacity to synthesise bioactive compounds used in drug development, and high-grade silica used for semi-conductor construction. This project will identify the gene networks controlling these biosynthetic processes.

DP0770744 Prof RW Dixon; Prof GL Whitlock; Dr L Dale; Dr K Bode

Approved Project Title **New Electronic Archives for Australian Literature**

2007 : $198,060
2008 : $142,181
2009 : $235,367
2010 : $90,067

Primary RFCD 4202 LITERATURE STUDIES

APD Dr K Bode

Administering Organisation The University of Queensland

Project Summary

Information capacity in Australian literary studies has been dramatically expanded by national investment in electronic archives, while trends in the discipline increasingly demand empirical support for claims about literary history and literary value. At the same time, research about Australian literature remains primarily theoretical, insufficiently informed by newly available data. This project aims to further enrich the new data sets, and to use them in an innovative return to the classical issues in Australian literary criticism and history. It will provide demonstration applications of data in new electronic archives.

DP0771213 Prof DD Do; Dr D Nicholson

Approved Project Title **Fundamental Characterization of Adsorption of Simple to Complex Fluids on Carbon Black and in Carbon Pores**

2007 : $90,000
2008 : $80,000
2009 : $70,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

Administering Organisation The University of Queensland

Project Summary

The outcome of this project will help designing engineers with a molecular simulation model for adsorption of simple to complex fluids commonly used in industries. The success of this project translates to a significant saving because it requires minimum effort in experimentation.

DP0773445 Prof PD Drummond

Approved Project Title **Simulating viral evolution and genetic complexity**

2007 : $92,765
2008 : $92,765
2009 : $91,765

Primary RFCD 2302 STATISTICS

Administering Organisation The University of Queensland

Project Summary

This project has direct relevance to understanding the growth of viral infections, and therefore has possible practical applications in disease research and control. Examples of these are emerging diseases in humans such as those caused by HIV-1, SARS coronavirus and Dengue virus, which cause considerable human suffering throughout the world. A major part of current research into these diseases involves attempts to model the evolutionary genetics and dynamics of virus populations in order to understand how to control epidemics, develop vaccines and design drugs. The research program is designed to provide new computational modelling tools for this purpose, which may have wider applications as well.

DP0771436 Dr SB Duffy

Approved Project Title **Spinoza, Kant and Deleuze on freedom and ethical difference: an immanent approach**

2007 : $77,030
2008 : $77,030
2009 : $77,030

Primary RFCD 4401 PHILOSOPHY

APD Dr SB Duffy

Administering Organisation The University of Queensland

Project Summary

Transcendent moral philosophies, such as those in the Kantian tradition, have significant disadvantages when it comes to developing ethical and political tools for multicultural communities such as Australia, as they lack the flexibility to negotiate between moral and religious groupings adhering to competing moral absolutes. In using Deleuze's thought to develop a non-transcendent or immanent approach to ethics, the project seeks to address this problem. It will provide a means of negotiating this plurality of beliefs without recourse to transcendent or universal values, or to any one dominant moral code. This approach aims to have a marked impact on national debate over the philosophical and practical possibilities of such an ethics.

DP0770936 Prof DP Fairlie

Approved Project Title **From Chemical Architecture to Protein Surfaces**

2007 : $100,000
2008 : $100,000
2009 : $100,000

Primary RFCD 2503 ORGANIC CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

Creation of small stable molecules that reproduce key functions of important protein surfaces, would be a significant technology breakthrough with many important potential applications in science, medicine & industry. As new scientific tools they could be used to interrogate biological systems & implicate specific protein surfaces in biological/disease mechanisms. As leads to new medicines (pharmaceuticals, vaccines, diagnostics), they could offer new ways of impacting on infection, diseases of the aged, & preventative medicine (National Research Priorities). As new intellectual property, the technology has the potential to advance basic science at the chemistry-biology interface while providing new economic opportunities for Australia.

DP0770048 Dr B Feng; Dr JC Diniz da Costa; Dr GX Wang; Dr JC Barry

Approved Project Title **Regenerable CO2 adsorbing materials for zero emission power generation systems**

2007 : $80,000
2008 : $80,000
2009 : $70,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Administering Organisation The University of Queensland

Project Summary

The new CAM material developed in this project will remove one of the major technical obstacles to the adoption of the zero emission power generation systems, leading to solutions to CO2 management without economic penalty.This project also contributes to building capacity in emerging advanced energy technologies, by keeping informed about major technology developments in areas of Australia's strategic interest.

DP0772550 Prof PR Freebody; Prof JG Hedberg; Dr KC Nichols; Dr WS Van Rooy

Approved Project Title **Transforming the technologies and modalities of learning: The case of the New Life Sciences in secondary schooling.**

2007 : $90,000
2008 : $90,000
2009 : $90,000

Primary RFCD 3301 EDUCATION STUDIES

Administering Organisation The University of Queensland

Project Summary

This project aims to provide theoretical and analytic frameworks for understanding changing intellectual, technological and communicational parameters of contemporary education, but it also aims to make these frameworks accessible enough to become part of the conceptual repertoire of professional practitioners and flexible enough to allow practitioners to maintain currency in evolving fields of knowledge in the NLS. As the NLS, and education in this field are both expanding export industries, this study will offer Australian practitioners and authorities evidence and ideas for the growth of the NLS in schools, thereby supporting the maintenance of Australia's prominence in the region as a high-quality, current education provider.

DP0771404 Dr BG Gabrielli

Approved Project Title **The function of truncated MEK1 protein in a G2 phase cell cycle delay and in mitosis. Understanding cell proliferation.**

2007 : $90,000
2008 : $88,000
2009 : $85,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation The University of Queensland

Project Summary

Intracellular signaling pathways controlling cell growth are often mutated in cancers and other hyperproliferative diseases. Understanding precisely how these pathways operate and how mutations of these pathways can contribute to uncontrolled growth can readily provide new targets for preventative therapies or cures. We have identified a novel mechanism regulating one component of a well studied pathway, the MAPK pathway, and new functions for this component. The contribution of this novel component to mechanisms involved in regulating cell growth previously through to be controlled by the canonical MAPK pathway could change our understanding of the fundamental mechanisms controlling cell growth.

DP0772404 Dr EM Gillam; Prof DL Ollis

Approved Project Title **Evolving enzymes to harness the clean energy reserves of nature**

2007 : $90,000
2008 : $88,000
2009 : $85,000

Primary RFCD 2708 BIOTECHNOLOGY

Administering Organisation The University of Queensland

Project Summary

We want to improve enzymes that are used by nature to harness huge amounts of energy - the energy present in glucose, one of the most abundant materials in the biosphere. The enzymes will be evolved to efficiently produce biological power in a practically useable form rather than for the growth of the organisms from which they originated. We will use this energy to drive the synthesis of chemicals of practical value, truly green chemistry. We also seek to answer questions such as: how do proteins evolve, how do enzymes work and how can biochemical pathways be optimised for industrial processes? This information will be of fundamental benefit for the use of enzymes in green chemistry, providing cleaner ways to produce important chemicals.

DP0771846 A/Prof RM Gillies; Dr AF Ashman

Approved Project Title **The effects of teacher and student dialogues during cooperative learning on students' discourse, problem-solving, and learning**

2007 : $90,000
2008 : $90,000
Primary RFCD 3301 EDUCATION STUDIES

Administering Organisation The University of Queensland

Project Summary

Teaching students to dialogue effectively together is critically important if they are to think and reason constructively and develop new understandings and learning. While cooperative learning experiences provide students with opportunities to interact with others, research clearly indicates that discourse can be enhanced when students are taught how to dialogue together so they learn to seek and answer thought provoking questions to construct new understandings and learning. This project builds on the benefits widely attributed to cooperative learning by helping teachers to enhance students' strategic and metacognitive thinking and facilitative communication patterns.

DP0770358 Prof NR Gottlieb

Approved Project Title **Immigration, technology and literacy: key challenges for language policy in a changing Japan**

2007 : $101,550
2008 : $110,000
2009 : $115,200
2010 : $82,200
2011 : $105,750
Primary RFCD 4201 LANGUAGE STUDIES
APF Prof NR Gottlieb

Administering Organisation The University of Queensland

Project Summary

Australia needs a sophisticated understanding of social and cultural dynamics in a regional partner with whom we have substantial economic, political and cultural relations. This project will problematise current language policy in Japan to take account of important recent areas of social transformation and associated key cultural beliefs about language. It will produce a body of significant individual research and policy recommendations; will bring together high profile international researchers and Japanese policy makers and educators in two collaborative exercises which will strengthen links between the two countries at both academic and government levels; and will launch the research career of a postgraduate student.

DP0770982 Dr A GOULLET DE RUGY; Dr TJ Carroll

Approved Project Title **Experimental and computational assessment of the mechanical, musculo-skeletal and neuromuscular contributions to rhythmic multi-joint arm movements**

2007 : $69,500
2008 : $60,500
2009 : $88,000
2010 : $68,000
Primary RFCD 3801 PSYCHOLOGY

Administering Organisation The University of Queensland

Project Summary

The human body is a complex mechanical system that is controlled by a vast neural network comprising many millions of connections. To date, realistic descriptions of the interactions between these neuro-mechanical features have proved elusive. This project seeks to develop a mathematical model that accurately describes the essential features of the control system for human movement, and yet is simple enough to inform the design of artificial devices to generate or assist movement. The knowledge derived should improve mechanical and neural prosthetic systems, and guide rehabilitation protocols. The work will ultimately provide a considerable benefit to the community by reducing the social cost of a range of movement disorders.

DP0773662 Prof P Gray; Dr KL Benson; Dr BR Oliver; Dr MR Hutchinson; Dr K Alpert

Approved Project Title **Superannuation Funds: Ensuring the Financial Health of Australians in Retirement**

2007 : $116,000
2008 : $117,000
2009 : $116,000

Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT

Administering Organisation The University of Queensland

Project Summary

Superannuation is relevant to all Australians, providing a foundation for their lifestyle in retirement. The protection and enhancement of superannuation savings have been high priorities of both government and regulatory agencies. Recent legislative changes include mandated choice of superannuation fund and increased disclosure requirements. Regulators have also flagged the need for increased corporate governance among superannuation funds. This project assesses the impact of these developments through an assessment of competition, performance and accountability within the superannuation industry. Monitoring the industry in this way will strongly contribute to the financial and economic health of Australians in retirement.

DP0770241 Dr MC Gregg

Approved Project Title **Working from home: New media technology, workplace culture and the changing nature of domesticity**

2007 : $79,493
2008 : $77,030
2009 : $77,030

Primary RFCD 4203 CULTURAL STUDIES

APD Dr MC Gregg

Administering Organisation The University of Queensland

Project Summary

New media technologies are often marketed as liberating people from the workplace, providing flexibility in meeting work obligations. Communication technologies in particular make working from home increasingly possible: laptops, mobile phones and PDAs make any space a potential site for paid labour. This research studies the effect of new media technologies on how work is performed, where and by whom, to gauge their impact on the community more broadly. It also asks whether these new relationships to work raise the prospect of changing traditional attitudes to the work performed in and outside the home by men and women.

DP0771627 Prof JF Hancock; Dr T Tian

Approved Project Title **Spatio-temporal modelling of Ras dependent MAP kinase activation**

2007 : $162,782
2008 : $150,580
2009 : $138,152
2010 : $126,614
2011 : $126,614

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

ARF Dr T Tian

Administering Organisation The University of Queensland

Project Summary

This project is at the heart of the national research priority 'Frontier Technologies for Building and Transforming Australian Industries'. Using cutting edge methods and techniques of systems biology, coupled with innovative experimental molecular cell biology we will construct and simulate mathematical models of the EGF-regulated MAP kinase pathway. The project will yield new insights into the fundamental mechanisms of cell signal transduction that drive cell division, differentiation and transformation and may enable the design of new anticancer therapies. Importantly, the modelling and simulation methods developed in the project will have a general applicability to other complex systems such as sustainable ecological systems.

DP0770716 Prof DG Hegney; Prof C Del Mar; A/Prof EA Patterson; Prof PA Scuffham; Dr D Eley; Mr PP Fahey

Approved Project Title **The feasibility, acceptability and cost-effectiveness of nurse-led models of chronic disease management in general practice**

2007 : $175,000
2008 : $175,000
2009 : $175,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Administering Organisation The University of Queensland

Project Summary

This study directly relates to the National Research Priority of 'promoting and maintaining good health' through our approach to trial a new and innovative model of chronic disease management specifically for CVD and Type II diabetes in general practice. This project aims to test a new model of health service delivery - that is, the use of a practice nurse to provide chronic disease care rather than a general practitioner. Our strategy involves collaboration with health providers, stakeholders and consumers to help achieve this by providing patient education and disease management through a registered nurse in general practice.

DP0770586 Ms BA Hewitt

Approved Project Title **Marital separation and divorce: social correlates, gender differences and initiation**

2007 : $83,000
2008 : $100,000
2009 : $88,000

Primary RFCD 3701 SOCIOLOGY

APD Ms BA Hewitt

Administering Organisation The University of Queensland

Project Summary

For most couples, although not all, separation and divorce eventually lead to more positive life experiences and outcomes, even so for all couples marriage breakdown has significant social, emotional and financial consequences (at least in the short term). Billions of dollars in direct (i.e. social security, family court system) and indirect costs (i.e. ill health, absenteeism) are incurred by the Australian community each year due to marriage breakdown. This research will help us to understand why some marriages breakdown while others remain intact, and in doing so, will add to the evidence base that informs policies concerning marriage and divorce.

DP0771023 Dr PJ Holbrook

Approved Project Title **A study of the impact of human agency in Shakespeare on Western culture and society**

2007 : $52,230
2008 : $41,106
2009 : $55,368

Primary RFCD 4202 LITERATURE STUDIES

Administering Organisation The University of Queensland

Project Summary

The project is important to the international reputation of English Literature scholarship and to the continuing development of Shakespearean studies in Australia. It will augment a growing area of research, the study of Early Modern Europe, that has achieved critical mass in this country, as reflected by the establishment in 2005 of the ARC Network for Early European Research. The project will contribute to our knowledge of the history of the ideal of personal and collective autonomy or self-determination, an ideal absolutely central to Australian culture. Grasping the rich genealogy and historical context of this formative and essential ideal is vital to understanding our national identity.

DP0771473 Dr MJ Hornsey; Prof JP Jetten

Approved Project Title **What people say and do in response to negative feedback: Explaining and reducing defensiveness toward individual and group criticism**

2007 : $62,000
2008 : $66,000
2009 : $67,000

Primary RFCD 3801 PSYCHOLOGY

Administering Organisation The University of Queensland

Project Summary

This research will allow us to devise, for the first time, a comprehensive account of how people respond to criticism, not just of their groups but also of themselves as individuals. The first part of the project (focusing on criticism of groups) will help provide specific recommendations regarding how to negotiate sensitive issues within and between a range of cultural, national, and corporate groups. The second part of the project (focusing on criticism of individuals) will provide specific recommendations regarding how to deliver negative feedback to individuals, a skill that is particularly important in educational contexts and in the workplace.

DP0772629 Prof IR Hunter

Approved Project Title **An intellectual history of theoretical innovation in the Anglo-American Humanities**

2007 : $94,836
2008 : $77,030
2009 : $77,030
2010 : $77,030
2011 : $77,030

Primary RFCD 4401 PHILOSOPHY

APF Prof IR Hunter

Administering Organisation The University of Queensland

Project Summary

This project makes an important contribution to the debate over humanities education. Post-structuralist theory in the humanities is attacked by some as modish and lacking in values, and defended by others as supporting critical reflection and progressive political and ethical values. The project explores the degree to which the 'moment of theory' represents the return of earlier European university metaphysics to the centre of the humanities curriculum. The project will study these shifts in theory in the humanities and show these to be highly relevant to contemporary debates about teaching and learning.

DP0773830 Dr Q Kaas

Approved Project Title **Theoretical and computational approaches to accurately predict the structures of a unique family of circular and knotted proteins.**

2007 : $92,030
2008 : $87,030
2009 : $87,030

Primary RFCD 2506 THEORETICAL AND COMPUTATIONAL CHEMISTRY

APD Dr Q Kaas

Administering Organisation The University of Queensland

Project Summary

The primary outcome will be a fundamental new knowledge on cyclotide structures and a new protein engineering method to design stabilised proteins. Because cyclotides have significantly higher stabilities than conventional proteins, they have a range of pharmaceutical and agricultural applications. Both fields of use have the potential for very great economic and social benefits for Australia. From a pharmaceutical perspective our computing development will greatly facilitate the design of stabilised peptide-based drugs using the cyclotide framework. Such drugs have potential sales of several billion dollars per annum and the royalty returns from successful commercialisation of IP can be substantial.

DP0774647 Prof MA Kendall; Prof MS Roberts

Approved Project Title **Micro-nanoprojection patches for minimally-invasive and targeted delivery of genes and drugs to skin cells: from concept to technology platform**

2007 : $220,000
2008 : $245,000
2009 : $210,000

Primary RFCD 2915 BIOMEDICAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

This project will address key science questions on the recently patented micro-nanoprojections patch, establishing it in Australia as a world leading technology in the rapidly growing and important field of gene and drug delivery. Unique internationally-competitive science outcoumes and research training will be generated at the interfaces between bioengineering, nanotechnology, pharmaceutical science and immunology. Ultimately, the project will allow improved treatment of major diseases (e.g. vaccination and immunotherapy of asthma). Achieving these health benefits by commercial pathways is expected to benefit the Australian community and emerging Biotechnology industry-creating highly valued career opportunities for Australians.

DP0774245 Prof GF King

Approved Project Title **Safeguarding Australia against invasive arthropod pests**

2007 : $204,000
2008 : $192,000
2009 : $180,000

Primary RFCD 2505 MACROMOLECULAR CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

An increasingly serious public health issue for Australia is the emergence of infectious diseases disseminated by arthropods such as ticks and mosquitoes. Arthropod-borne viruses are already the major human pathogens in Australia, and they disproportionately affect Aboriginal communities. The aim of this research is to develop environmentally-sustainable methods for controlling arthropods that destroy crops or disseminate human and animal disease. These insecticides will not only provide benefits within Australian territories, but will be useful to our defence forces when operating in overseas locations where arthropod pests are a problem (e.g., malarial regions of Iraq).

DP0771341 Dr A Kloda; Prof B Martinac; A/Prof OP Hamill

Approved Project Title **Mechanosensitive properties and modulation of N-methyl-D-aspartate (NMDA) receptors by lipid environment**

2007 : $120,000
2008 : $115,000
2009 : $115,000
2010 : $115,000
2011 : $115,000

Primary RFCD 2702 GENETICS

ARF Dr A Kloda

Administering Organisation The University of Queensland

Project Summary

This project will provide new information about the molecular determinants which influence NMDA receptor channel gating that will significantly advance our understanding of a link between NMDA receptor function and many neurodegenerative diseases as well as pain and learning and memory. The outcomes of this project may lead to the discovery of novel lipid-based biomaterials for application in medicine and the drug industry. This research is highly significant in relation to human health. The biological and nutritional aspects of polyunsaturated lipids and dietary fish oils have long been recognized. Thus this project will provide further knowledge that could benefit the health of the nation with consequent reduced health care costs.

DP0770036 Prof PA Koopman

Approved Project Title **How the Y Chromosome makes a male: Molecular genetic analysis of key sex-determining genes**

2007 : $359,727
2008 : $323,000
2009 : $305,000
2010 : $305,000
2011 : $255,000

Primary RFCD 2702 GENETICS

APF Prof PA Koopman

Administering Organisation The University of Queensland

Project Summary

Sex reversal and intersex syndromes are among the most common and highly stigmatized disorders affecting newborn babies. Our research will reveal how the Y chromosome regulates normal male development, identify the steps that go wrong in many male babies, and suggest ways to diagnose and deal with these conditions. It will also pave the way for biotechnological applications in the areas of stem cell technology, pest management, wildlife conservation and animal breeding.

DP0773092 Prof GA Lawrence; Prof DF Burch; Dr JM Dixon

Approved Project Title **From Seedling to Supermarket: The Social and Environmental Implications for Australia of the Restructuring of Agri-food Supply Chains**

2007 : $27,000
2008 : $107,000
2009 : $200,000
2010 : $38,000

Primary RFCD 3701 SOCIOLOGY

Administering Organisation The University of Queensland

Project Summary

The organisation of agri-food industries is having a major impact upon firms and individuals along the supply chain, including the sustainability of on-farm production. Australia will benefit greatly if foods being produced are from environmentally sound production and distribution systems: current evidence suggests sustainability is not being achieved. The emerging self-regulatory system for supermarkets may also militate against environmental security and food safety. Finally, supermarket practices have a profound influence over consumer diet and health. In exploring issues of power, food safety regulation, and diet, the research will contribute to a healthier system of food production and consumption in Australia.

DP0772417 Mr B Li

Approved Project Title **A mechanism to authenticate porcelain treasures from the Yuan-Ming dynasties (1260-1644 AD) in China**

2007 : $95,000
2008 : $95,000
2009 : $90,000

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

APD Mr B Li

Administering Organisation The University of Queensland

Project Summary

Jingdezhen wares were the most widely exported of all Chinese porcelains with worldwide distribution and representation in ancient sites and museum collections, including many in Australia. They are often auctioned at high prices (e.g. £15.68 million for one Yuan dynasty blue-and-white jar in 2005), but their authenticity is often controversial, leading to lawsuits and attracting public interest. The chemical database from this research will enable unequivocal authentication of Jingdezhen porcelain prevailing world antique markets, allowing treasures to be sorted out of trashes. The project strengthens links with China, UK, USA and Japan. It greatly enhances knowledge base about China, which is having increasing interaction with Australia.

DP0772660 Prof L Li; A/Prof DA Lockington; Prof DA Barry

Approved Project Title **Tidal dynamics of a subterranean estuary: Processes and functions**

2007 : $50,000
2008 : $40,000
2009 : $30,000

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

Coastal environments and resources are of great significance for Australia economically and socially. Water pollution in many coastal areas is a serious environmental problem, threatening marine and estuarine ecosystems. High nutrient levels in coastal waters are causing alarming damage to the Great Barrier Reef. The proposed project investigates an important mechanism underlying the chemical transfer from the aquifer to the ocean. It will provide better understanding of the pathway of land-derived nutrients and contaminants entering coastal waters, leading to (1) improvement of strategies for sustainable coastal resources management and development and (2) integration of upland and lowland catchments management.

DP0772707 A/Prof IA Lilley

Approved Project Title **Loyalty Islands Archaeological Project: Phase I (Tiga Island)**

2007 : $56,000
2008 : $40,000
2009 : $48,000

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

Administering Organisation The University of Queensland

Project Summary

The project is explicitly intended to help safeguard Australia by strengthening our understanding of our region and the world. The study will substantially enhance international research cooperation between Australia, France and the French Pacific territories and will contribute to South Pacific development through its direct and indirect spin-offs for cultural heritage management and tourism. These outcomes will directly benefit the nation/community at a time when social, cultural and historical issues of the sort addressed by the project are assuming an ever-greater importance in an uncertain global security environment.

DP0770844 Prof OV Lipp; Prof DJ Terry; Dr JR Smith

Approved Project Title **The many faces of threat: An investigation of animal, interpersonal and intergroup threat**

2007 : $120,000
2008 : $140,000
2009 : $146,000
2010 : $143,000
2011 : $143,000

Primary RFCD 3801 PSYCHOLOGY

APF Prof OV Lipp

Administering Organisation The University of Queensland

Project Summary

Threat to personal safety can take a number of guises, a snake in the grass, an angry neighbour or, increasingly often in our modern world, a stranger who looks different. The present project will investigate the manner in which we respond to these threats, whether these responses can be modulated and what determines the threatening nature of an event. A better understanding of how we react to real or perceived threats, in particular those involving other humans, will aid our understanding of human behaviour in an ever faster changing environment, both in our region and more broadly.

DP0773954 A/Prof JW Lynch

Approved Project Title **Molecular structure and function of the glycine receptor**

2007 : $90,000
2008 : $88,000
2009 : $85,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation The University of Queensland

Project Summary

This proposal will employ a cutting edge approach to reveal fundamental new insights into the ways that ligand-gated ion channels, and proteins in general, work. The new knowledge and technology developed here will broaden and strengthen Australia's research expertise across a number of basic scientific disciplines. The results will also have relevance to human health. Glycine receptors have an essential role in brain function and are targets for anaesthetics and drugs of abuse. GlyRs are also important in modulating pain sensation by the brain. New insights into how natural agonists and drugs affect ion channel structure and function may lead to novel therapeutic opportunities and improved drug structure predictions.

DP0770375 Prof AE Mark; Dr CT Tuttle

Approved Project Title **Dynamic modelling of biomolecular systems: Going beyond classical empirical force fields.**

2007 : $200,030
2008 : $200,030
2009 : $180,030

Primary RFCD 2506 THEORETICAL AND COMPUTATIONAL CHEMISTRY

APD Dr CT Tuttle

Administering Organisation The University of Queensland

Project Summary

The ability to accurately model the structural and functional aspects of biomolecular systems at an atomic level is of fundamental importance in the pharmaceutical and biotechnological industries. By developing new approaches for treating dispersion terms and transition metals we aim to improve our understanding of critical biomolecular systems such as how novel anti-cancer metal complexes interact with DNA and block transcription and the role various transition metals such as Cu(II) and Zn(II) stabilize the conformations of peptides involved in Alzheimer's disease. In addition by greatly expanding the range of systems that can be modeled efficiently the work will have widespread benefits in academic research as well as for industry.

DP0770465 A/Prof JL Martin; A/Prof B Kobe; Prof JL Hunter; Dr S Kellie

Approved Project Title **Macrophage proteins: structure, function and e-science**

2007 : $335,000
2008 : $300,000
2009 : $298,000
2010 : $298,000
2011 : $231,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

APF A/Prof JL Martin

Administering Organisation The University of Queensland

Project Summary

The human genome was published five years ago, yet the functions of only a small fraction of the tens of thousands of encoded proteins are known. The development of smarter and faster methods for elucidating the structure and function of uncharacterised proteins is vital to a knowledge-based economy and a healthy society. The long-term benefits to the community will include fundamental new knowledge, generation of new pharmaceuticals and the development of new eScience approaches to streamline costs and efforts of research and to make science more accessible to the public.

DP0769983 Prof B Martinac; Dr BA Corry; Dr PJ Rigby; Prof E Perozo; Prof K Schulten; Dr SL Grage; A/Prof OP Hamill; Dr E Honore

Approved Project Title **Force from lipids: the role of the lipid bilayer in mechanosensory transduction**

2007 :	$350,000
2008 :	$325,000
2009 :	$325,000
2010 :	$329,821
2011 :	$234,165

Primary RFCD 2799 OTHER BIOLOGICAL SCIENCES

ARF Dr BA Corry

APF Prof B Martinac

Administering Organisation The University of Queensland

Project Summary

The proposed research will significantly contribute to a better understanding of the wide range of physiological processes underlying mechanosensory transduction in living cells. The direct benefit for Australian science consists of: (i) strengthening international links with leading overseas laboratories, and (ii) accessing the state-of-the-art expertise not available in Australia. The acquired knowledge will aid in developing and designing artificial tactile sensors inspired by their biological models studied in this project. Long-term, the project is expected to make an original contribution towards developing new technologies and novel medical applications, both of which promise to be of great national benefit.

DP0772644 A/Prof HI McCallum

Approved Project Title **Network structure, connectivity and wildlife disease**

2007 :	$70,000
2008 :	$70,000
2009 :	$70,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Administering Organisation The University of Queensland

Project Summary

Emerging infectious diseases of wildlife pose threats to human health (75% of human emerging diseases are zoonotic). They also threaten biodiversity and livestock. Changes in connectivity between wildlife individuals and populations are occurring because of human activities, including globalisation, climate change and habitat destruction. Understanding how these changes in connectivity affect wildlife disease dynamics is crucial for the development of better strategies to manage their impacts. The project will also build Australia's wider capacity to manage outbreaks of infectious diseases.

DP0770617 Prof RH McKenzie; Dr MP Kennett; Dr NE Hussey

Approved Project Title **Quantum coherence of electronic transport in layered magnetoresistive materials**

2007 :	$87,000
2008 :	$92,000
2009 :	$97,000

Primary RFCD 2404 OPTICAL PHYSICS

Administering Organisation The University of Queensland

Project Summary

The continued rapid expansion of information technology requires new materials and devices for information storage. State of the art computer memories are based on new materials which consist of layers of complex arrays of atoms. These materials have metallic properties quite unlike those of simple metals such as copper and steel. This research will lead to a greater understanding of and ability to design better materials. Australia's capacity for research and development in this scientifically challenging and technologically important field will be enhanced by this project.

DP0772887 Prof GJ McLachlan; Dr SK Ng; Dr A Ng

Approved Project Title **Multivariate Methods for the Analysis of Microarray Gene-Expression Data with Applications to Cancer Diagnostics**

2007 : $196,710
2008 : $193,494
2009 : $201,895
2010 : $153,000
2011 : $150,000

Primary RFCD 2302 STATISTICS

APF Prof GJ McLachlan

Administering Organisation The University of Queensland

Project Summary

The project will benefit the Australian Society as a whole by developing statistical methodology for the analysis of high-throughput data. In particular, it will develop a novel and easily implemented model for the analysis of correlated and structured data that may be of high dimension. It thus has wide applicability to improving the quality and validity of applied research in most industries in Australia. More specifically, it is to be applied here to the diagnosis and prognosis of ovarian cancer. This cross-disciplinary project will strengthen Australian researchers' capacity and capability of participating in cutting-edge DNA microarray research.

DP0771910 Prof AP Middelberg; Dr AF Dexter

Approved Project Title **Microfluidic Studies of Stimuli-Responsive Emulsions**

2007 : $190,000
2008 : $170,000
2009 : $170,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

Breakthrough 'stimuli-responsive interface technology' has been developed in Australia to allow better control over emulsions, which are oil-in-water mixtures used widely in everyday products such as medicines. This project will increase our understanding of this new technology, by examining how the chemistry of the molecules at the interface interacts with fluid behaviour when the emulsion is made. The research will employ miniature lab-on-a-chip systems, to give engineers and scientists design rules for this new technology, opening the way to new products that will improve our everyday lives. One immediate product to be researched is 'precision' double emulsions, which show unique properties for the delivery of chemotherapy medicines.

DP0773111 Prof AP Middelberg; Dr SP Mickan; Dr L Lua

Approved Project Title **Terahertz Spectroscopy of Mass-Manufactured Viral Vaccines**

2007 : $196,148
2008 : $161,136
2009 : $194,116

Primary RFCD 2906 CHEMICAL ENGINEERING

Administering Organisation The University of Queensland

Project Summary

The breakthrough vaccine for cervical cancer proves that new and exciting products are on the way to treat and protect against previously untouchable diseases. Similar products for bird flu are being researched, and new manufacturing methods are urgently needed to get this science to market at a price that people can afford. However, manufacturing innovation in the pharmaceutical industry is constrained by a lack of methods for product analysis. In this project engineers will devise advanced methods to fingerprint these new vaccine products, ensuring that manufacturing processes can be improved without compromising safety. These new analytical techniques will potentially lead to new low-cost vaccine products made in Australia.

DP0772409 Prof PR Mora; Dr A Tordesillas; Dr F Alonso-Marroquin

Approved Project Title **Micromechanical modelling of fault gouge dynamics: towards an improved fault constitutive relation**

2007 : $120,773
2008 : $110,773
2009 : $110,773
2010 : $57,773

Primary RFCD 2602 GEOPHYSICS

APD Dr F Alonso-Marroquin

Administering Organisation The University of Queensland

Project Summary

The human and economic costs of geological and other particulate media related problems in Australia are staggering. These include geological hazards (e.g. landslides and earthquakes; the Newcastle earthquake cost around $4 billion and 13 lives), to particulate processes prevalent in Australia's major export industries (e.g. coal export valued at $9.3 billion, iron ore at $3.8 billion, and wheat at $3.4 billion), to Australia's 810,000 km granular paved road network that costs around $5.5 million per day to maintain. The program will deliver new knowledge and advanced analytical and predictive modelling tools capable of fuelling breakthroughs in earthquake forecasting research and industrial innovations.

DP0773371 Prof RG Morgan; Dr PA Jacobs; Dr TJ McIntyre; A/Prof DR Buttsworth; Dr MN Macrossan; Dr PA Gnoffo

Approved Project Title **Radiating hypersonic flows**

2007 : $160,000
2008 : $160,000
2009 : $170,000

Primary RFCD 2902 AEROSPACE ENGINEERING

Administering Organisation The University of Queensland

Project Summary

Benefits will accrue through the involvement of Australia in the international program for future space missions. Through this project, Australia, already among the leaders in scramjet propulsion development, can also become a major player in spacecraft design. Significant educational benefits will be created due to the challenging nature of the work, through immediate contact with leading overseas researchers, and through subsequent marketing of flight vehicles. The project could lead to the involvement of Australian technology at a commercial level in a new generation of hardware for space exploration.

DP0771377 Prof HB Muhlhaus; Dr AJ Hale; Prof RS Sparks; Dr OE Melnik; Prof G Wadge

Approved Project Title **Computationally Modelling a Volcano: Flow and Stability.**

2007 : $100,030
2008 : $85,030
2009 : $95,030

Primary RFCD 2601 GEOLOGY

APD Dr AJ Hale

Administering Organisation The University of Queensland

Project Summary

Mainland Australia is fortunate not to suffer directly from active volcanism. However, this does not mean volcanoes are of little importance. The products of ancient eruptions can define the wealth of a nation. But they are also highly destructive and there are currently 30 active volcanoes capable of generating a tsunami that could affect Australia. Understanding the physical processes using computational models is essential to save lives and help us benefit from their products. This is a relatively new research field and owing to the resources in Australia, our research team has the potential to be at the forefront. There is also the capability to build and impressive research team within the University of Queensland.

DP0772992 Prof SL O'Neill; Dr JC Brownlie

Approved Project Title **Host provisioning by Wolbachia: re-examining the invasion potential of a common invertebrate endosymbiont**

2007 : $80,000
2008 : $80,000
2009 : $80,000
Primary RFCD 2705 ZOOLOGY

Administering Organisation The University of Queensland

Project Summary

Wolbachia are often described as reproductive parasites that manipulate their host for their own gain. This study will determine for the first time how Wolbachia can help its insect host during periods of nutritional stress. As Wolbachia are able to infect host populations it will be used in the near future to control insects that transmit disease or are commercial pests. Understanding how Wolbachia interacts with its host, as a parasite or beneficial, will improve its application in the field. Knowing how benefits are provided to the host will improve human health in the future. As Wolbachia are needed for filarial nematode development, disrupting the beneficial mechanisms identified in this study will improve filariasis control programs

DP0773547 Prof TA O'Regan; Dr BM Goldsmith

Approved Project Title **Redesigning Australian film and television production for Multichannel Environments, 1995-2009**

2007 : $62,265
2008 : $64,727
2009 : $105,071
2010 : $32,294
Primary RFCD 4001 JOURNALISM, COMMUNICATION AND MEDIA

Administering Organisation The University of Queensland

Project Summary

The project has clear national benefits in that it represents a new approach to understanding the difficulties and opportunities confronting Australian situated audio-visual production at a time of profound change. In centering the transformation of the production industry under the impact of structural adjustment to multi-channeling and increasing transnationalization, the study promises new perspectives on strategic policy and industry priorities which will strengthen the capacity for innovation and international linkages among producers, policy makers and educators. It fits the national priority of 'Frontier technologies for building and transforming Australian industries' related to 'promoting an innovation culture and economy'.

DP0773122 Prof ME Orlowska; Dr S Sadiq

Approved Project Title **Approaching the limits in Data Quality Management**

2007 : $128,531
2008 : $105,000
2009 : $90,000
Primary RFCD 2801 INFORMATION SYSTEMS

Administering Organisation The University of Queensland

Project Summary

The impact of data quality has acquired new heights in the current climate of global information systems, triggering the attention of researchers and software vendors. However, some fundamental questions are neglected in current solutions, allowing us to avail an opportunity to promote Australia's capability in developing cutting edge technologies that have the capacity to make dramatic impact on success of technology solutions. Focus on exploring the limitations and providing a grounded understanding of data quality management has potential to significantly add to Australia's research profile. The project will also provide a conducive environment for students to gain high quality research experience.

DP0770471 A/Prof AC Perkins; Dr MC Frith; A/Prof MJ Weiss; Prof RC Hardison; Dr TL Bailey

Approved Project Title **Transcriptional regulation of erythropoiesis**

2007 : $90,000
2008 : $88,000
2009 : $85,000
Primary RFCD 2702 GENETICS

Administering Organisation The University of Queensland

Project Summary

The major expected outcome from this proposal will be development of a pipeline for the study of how transcription factors work at a genome level. There will be national benefit in the areas of Frontier Technologies, and Promoting and Maintaining Good Health. There will be specific outcomes with respect to development of tests for human blood diseases, future design of drugs to target the aberrant activities of transcription factors in genetic and degenerative diseases. Also, a strong bridge will be built upon the previous collaborations of the research teams in Brisbane and Pennsylvania, which will facilitate advanced teaching and training of Australian PhD and post-doctoral scientists.

DP0771676 Dr T Plakhotnik; Prof Dr M ORRIT

Approved Project Title **Sensing single electrons with single molecules**

2007 : $120,000
2008 : $110,000
2009 : $100,000
Primary RFCD 2404 OPTICAL PHYSICS

Administering Organisation The University of Queensland

Project Summary

The focus of this project is on optical detection of single electron transport in solids and in large/bio molecules. Successful experimental demonstration of the proposed technique will considerably enhance Australia's standing in high profile areas of natural sciences. In practical terms, it can contribute to development of new generation solar cells, artificial photosynthetic centres, and a new generation of nanoprobes for biomedical applications. Because the single-molecule technique is a new and dynamic field, opportunities exist for significant commercial property development. The project will also train a number of students in several fields of high technology, all of which are likely to have high demand in the future.

DP0773169 Dr MA Schlosshauer

Approved Project Title **Decoherence in quantum computing and quantum electromechanical systems**

2007 : $85,030
2008 : $77,030
2009 : $77,030
Primary RFCD 2402 THEORETICAL AND CONDENSED MATTER PHYSICS
APD Dr MA Schlosshauer

Administering Organisation The University of Queensland

Project Summary

Australia is one of the world leaders in fundamental studies and implementation of quantum computing and quantum electromechanical systems. By developing a framework to quantify and control noise due to decoherence in such systems, this research will facilitate progress in the development and understanding of quantum computing and quantum electromechanical devices. The project will also significantly strengthen the general representation of research on decoherence, a field of crucial importance to many areas of theoretical and experimental physics, in Australia. Funding of this project will enable Australia to further expand its leading position in cutting-edge science and next-generation technology.

DP0773483 Dr HT Shen

Approved Project Title **PreferPeer: Towards Efficient Location-aware Preference Search in Mobile Peer-to-Peer Databases**

2007 : $56,000
2008 : $56,000
2009 : $56,000

Primary RFCD 2801 INFORMATION SYSTEMS

Administering Organisation The University of Queensland

Project Summary

Our research is right in the forefront of ICT research, leading the international effort of extending database technologies to support data management and query processing in very large scale highly mobile data. The proposed PreferPeer stands to open up major research directions in mobile point-to-point computing. Advances in this project will bring significant economic and social benefits to Australia. The research outcome of this project will directly benefit the following sectors: telecommunications, transportation, supply chain management, logistics, mobile computing, mobile e-commerce and marketing, air traffic control, defence, and so on, where efficient access to large amounts of highly mobile and distributed information is vital.

DP0771867 Prof SC Smith

Approved Project Title **Quantum Unimolecular Reaction Dynamics: from Isolated Molecules to Protein-Embedded Chromophores**

2007 : $80,000
2008 : $77,000
2009 : $80,000

Primary RFCD 2506 THEORETICAL AND COMPUTATIONAL CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

The outcomes of this research will (a) enhance the reputation of Australian science internationally,(b) develop highly skilled research personnel with core capabilities in computational chemistry who can contribute to Australian industry, (c) lead to more accurate modelling of atmospheric ozone depletion phenomena, and (d) improve our understanding of the most common cellular imaging tool - the Green Fluorescent Protein - with spinoff benefits for molecular biology research in Australia through the potential for design of new fluorescent proteins.

DP0771959 Dr PK Stephenson

Approved Project Title **A study of the rise of Islam and community survival in Indigenous Australia**

2007 : $83,542
2008 : $81,849
2009 : $82,380

Primary RFCD 3701 SOCIOLOGY

APD Dr PK Stephenson

Administering Organisation The University of Queensland

Project Summary

The recovery of the history of Islam in Indigenous Australia makes available new information about the sources of national identity. It provides compelling arguments to dismantle community stereotypes that have prevented the recognition of an exemplary hybrid community tradition as integral to our collective sense of self. Linked to the contemporary phenomenon of Indigenous Islamicisation, this study makes possible a new and timely dialogue between Australian Muslims, Indigenous communities and Australian society generally. Identifying new sources and resources of community-making at a local, national and international level, this study significantly enriches Australia's capacity to negotiate its place in the world.

DP0772934 Dr M Sterling; Prof JA Kenardy; A/Prof CG Maher; Dr RE Darnell

Approved Project Title **The development of chronicity following whiplash injury: the fear-avoidance model versus a neurobiological stress model.**

2007 : $220,100
2008 : $92,266
2009 : $100,266

Primary RFCD 3210 CLINICAL SCIENCES

Administering Organisation The University of Queensland

Project Summary

The economic burden of musculoskeletal conditions is second only to cardiovascular disease and Whiplash Associated Disorders are one of most economically costly musculoskeletal conditions. This project brings together leading Australian multiprofessional spinal pain researchers to investigate physiological and psychological processes involved in the development of chronic pain after whiplash injury. The results will improve the understanding of the processes and inter-relationships between these processes in the development of chronic whiplash pain thus leading to the development of improved early intervention strategies in order to prevent the transition to chronicity.

DP0773438 A/Prof PA Strooper

Approved Project Title **Cost-effective use of assertions in the verification and validation of distributed and real-time systems**

2007 : $43,000
2008 : $85,000
2009 : $88,000

Primary RFCD 2803 COMPUTER SOFTWARE

Administering Organisation The University of Queensland

Project Summary

The project will reinforce Australia as a world leader in empirical software engineering and software verification and validation research, thus building on Australia's strengths in ICT research and innovation. Through the involvement of a local software verification and validation company and through industrial case studies, this project will also improve the software verification and validation capabilities of local industry, allow them to save software development costs, and improve the quality of the software produced.

DP0771169 A/Prof RA Sturm; Prof JL Stow

Approved Project Title **Combined genetic and cellular analysis of melanisation to study variation in human pigmentation**

2007 : $170,000
2008 : $165,000
2009 : $160,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation The University of Queensland

Project Summary

This investigation examines variations in the genes that are important determinants of human skin pigmentation and are likely to be associated with skin cancer risk. Our research program will form the basis of future diagnostics based on major genes that determine a persons skin type. Current skin cancer prevention strategies rely predominantly on broad spectrum campaigns that are aimed at increasing the general community awareness of the damaging effects of UV radiation. A better understanding of the genetic basis of UV-sensitive skin types will greatly enhance the targeting of such skin cancer-prevention campaigns, provide an understanding of changes that occur in skin pathology, and the mechanisms of sun induced tanning.

DP0770113 Dr T Suddendorf; Dr M Nielsen

Approved Project Title **Thinking about the future: The nature and development of mental time travel**

2007 : $49,000
2008 : $58,000
2009 : $50,132
Primary RFCD 3801 PSYCHOLOGY

Administering Organisation The University of Queensland

Project Summary

This project is one of the first systematic investigations into the development of the human capacity to consider future events. A variety of novel tasks will probe what children know about the future and how it relates to their ability to reason about past events. Comparisons between children and apes will further inform us about the nature of this crucial mental skill. The findings will provide valuable information for developing appropriate educational approaches and for our understanding of abnormalities. As international leaders in this field, we are in an ideal position to conduct this research, offer unique opportunities for postgraduate training, and to continue in Australia's outstanding tradition of excellence in basic research.

DP0771706 Dr RD Teasdale; Prof JL Stow

Approved Project Title **The molecular basis of macropinocytosis in mammalian cells: the composition of endosome proteins and their function**

2007 : $90,000
2008 : $88,000
2009 : $85,000
Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation The University of Queensland

Project Summary

Individual cells communicate with their immediate environment by the process of macropinocytosis, a process that involves the exchange of materials between the extracellular space and a specialised region of the cell termed endosomes. It is an important process in mammalian cells being essential to the correct functioning of many tissues. This project will advance understanding of macropinocytosis at a molecular level. The project is relevant to understanding the functioning of normal cells and the means by which some pathogens can enter cells and also understanding processes involved in tumour progression and metastasis.

DP0771481 Dr P Thorn

Approved Project Title **A new model for secreton in epithelial cells**

2007 : $90,000
2008 : $88,000
2009 : $85,000
Primary RFCD 2706 PHYSIOLOGY

Administering Organisation The University of Queensland

Project Summary

This proposal sets out to test a new model for secretion that we have developed in the light of recent experimental data. The project outcomes will advance our understanding of normal processes of secretion and may be important in understanding disease. We will develop cutting-edge techniques of microscopy which will place Australia at the forefront of this exciting field. The project will bring benefit to the Australian scientific community through interactions and collaborations with other scientists in Australia and internationally and will benefit early-career scientists, training them in novel methods and allowing them to develop their research expertise and profile and enabling them to compete on the world science stage.

DP0771244 Dr JR Tresilian; Dr AM Plooy

Approved Project Title **Preparatory processes in rapid interceptive action**

2007 : $125,000
2008 : $50,000
2009 : $90,000
Primary RFCD 3801 PSYCHOLOGY

Administering Organisation The University of Queensland

Project Summary

This project investigates the nature of the processes involved in preparing to act in response to a moving object: actions that elite sportspeople perform with amazing precision: timing to within a few thousandths of a second is routine when hitting a ball in tennis and cricket. The average person can be capable of something similar and it means being ready to make the right movement at the right time. Understanding the preparatory processes involved will be a significant scientific advance and knowledge of their workings and limits can contribute to the development of strategies for improving safety in dynamic environments such as city roads. This project will put an Australian laboratory at the cutting edge in this area of research.

DP0771585 A/Prof M Veidt; Dr F Rose; Prof P Cawley

Approved Project Title **Tomographic Imaging of Structural Damage in Plates**

2007 : $60,000
2008 : $60,000
2009 : $60,000
Primary RFCD 2999 OTHER ENGINEERING AND TECHNOLOGY

Administering Organisation The University of Queensland

Project Summary

The potential benefit of structural health monitoring is highlighted by the socio-economic impact of structural failure, which may result in loss of lives, infrastructure disruptions and loss of productivity. This proposal promotes a fundamental advance in the novel concept of ultrasonic diffraction tomography for imaging early stage structural damage in plates. The successful development will represent an essential advance in quantitative non-destructive evaluation of thin structures and enable the transition of the technique to realistic structures with all the potential benefits in mechanical and civil infrastructure management resulting in improved safety, reduced maintenance costs and the use of more efficient structural designs.

DP0770096 Prof PM Visscher; Prof ME Goddard

Approved Project Title **Maximising knowledge from dense SNP (single nucleotide polymorphisms) data using multi-locus analysis**

2007 : $103,000
2008 : $103,000
2009 : $103,000
Primary RFCD 2702 GENETICS

Administering Organisation The University of Queensland

Project Summary

The genomics revolution has made it possible to measure thousands of DNA variants in individuals. This information can be used in many ways, including to find genes that cause variation between individuals in a population and to estimate the size of the population in the past. Our study will lead an analysis method that will extract more information out of such data. This will improve the efficiency of gene mapping methods, including applications in humans for traits related to productive ageing and a healthy start to life, will allow the estimation of genetic relatedness and genetic variation in natural populations, and will lead to more efficient selection programs in agricultural populations.

DP0773490 Dr L Wang; Dr S Qiao

Approved Project Title **New Pillared Nanoporous Materials for Hydrogen Production by Photoinduced Water Splitting**

2007 : $70,000
2008 : $60,000
2009 : $50,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Administering Organisation The University of Queensland

Project Summary

The increasing concern over the limited supply of conventional energy sources has triggered world-wide efforts in developing alternative energy generation systems. Hydrogen produced from sunlight and water is considered as an ultimate solution for the hydrogen economy. This project addresses the material needs for more efficient and cleaner means of generating/utilising energy. The novel nanoporous materials with increased photocatalytic water splitting efficiency will lead to new breakthrough in technologies for energy conversion materials. The preparation approach is also applicable to other functional layered materials, providing new opportunities for innovative nanotechnology to more efficient and greener energy industries.

DP0773909 Dr MI Weisler; Dr K Yu

Approved Project Title **Precisely Dating the Evolution of Complex Societies in Polynesia: The Hawaiian Example**

2007 : $63,000
2008 : $94,000
2009 : $72,000

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

Administering Organisation The University of Queensland

Project Summary

It is of enormous national benefit to develop intellectual innovations that set Australia apart from its neighbours and establish its position as a regional leader in science. Because the Australasian region relies heavily on primary resource exploitation, intellectual developments are crucial for sustainable economic growth. Understanding how societies meet the challenges of resource depletion, landscape degradation, drought and population increase can be monitored with archaeological data over hundreds of years. Our research seeks to use an innovative technique for precisely dating major changes in Oceanic societies over the past 500 years, which will provide insights into how modern communities can cope with these problems today.

DP0770863 Prof C Wentrup

Approved Project Title **Reactive intermediates and microwave-assisted organic reactions**

2007 : $75,000
2008 : $60,000
2009 : $60,000

Primary RFCD 2503 ORGANIC CHEMISTRY

Administering Organisation The University of Queensland

Project Summary

The use of our chemistry to help develop new, safer, better drugs against schizophrenia is a strong driving force for this research. This relates to the National Research Priority of promoting and maintaining good health, ageing well and productively, and preventative healthcare. Microwave-assisted chemical synthesis will undoubtedly become a very important methodology in the pharmaceutical industry, and our work will help developing such know-how in Australia and thereby contribute to the Australian economic fabric.

DP0770686 Dr A Yu; Dr C Yu

Approved Project Title **Smart Nanocapsules for Efficient Cellular Delivery of Bioactive Peptide Drugs**

2007 : $50,000
2008 : $50,000
2009 : $50,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Administering Organisation The University of Queensland

Project Summary

This project will bring about practical benefits in terms of developing efficient therapeutic drug delivery systems, which has a market growth estimated to be ca. 23% p.a. in the world. The novel encapsulation technology developed in this project is not only desirable for biomolecules but also applicable for other functional materials and will find wide applications in a number of fields, such as chemical, food processing and cosmetic industries. Successful completion of the project can also strengthen our capacity to participate in new areas of research and positioning Australia at the forefront of bionanotechnology.

DP0773894 Dr Z Yuan

Approved Project Title **New computational methods study on protein function prediction**

2007 : $55,000
2008 : $50,000
2009 : $45,000

Primary RFCD 2399 OTHER MATHEMATICAL SCIENCES

Administering Organisation The University of Queensland

Project Summary

The proposed research aims to develop new computational methods to solve one of the most important bioinformatics problems in the post-genome era. This project will expand the knowledge on protein sequence-structure-function relationship, provide new analysis methods and predict the functions of novel proteins. This project will strengthen Australia's reputation for research excellence.

DP0773081 A/Prof J Zhao; Dr K Yu; A/Prof MF Barbetti; Dr Q Hua; Prof Y Wang

Approved Project Title **Characterising the tropical "heat engine" of global climate: combined coral, stalagmite and tree-ring records from the Indo-Pacific region**

2007 : $192,614
2008 : $192,614
2009 : $102,614
2010 : $96,614
2011 : $96,614

Primary RFCD 2606 ATMOSPHERIC SCIENCES

ARF Dr K Yu

Administering Organisation The University of Queensland

Project Summary

The recent anthropogenic global warming is causing polar icecap melting, sea level rise, reef coral bleaching and degradation, and increased frequency and intensity of severe droughts, floods, tropical cyclones/hurricanes/typhoons in the past decades, focusing daily media headlines worldwide. Our study will enhance understanding of global climate change, El Niño and Asian-Australian monsoon variability and coral reef degradation, and provide improved knowledge for future predictions. The outcome will impact on our National Research Priority 1: An Environmentally Sustainable Australia, enhance Australia's leadership in coral reef research, and contribute to an improved relationship with our neighbours in science, education and training.

DP0770414	Dr G Zuckermann
Approved Project Title	**Revival' in the Middle East: The Genesis of Israeli ('Modern Hebrew') - lessons for revival of no-longer spoken Australian languages**
2007 :	$125,000
2008 :	$130,000
2009 :	$130,000
2010 :	$100,000
2011 :	$100,000
Primary RFCD	3802 LINGUISTICS
ARF	Dr G Zuckermann
Administering Organisation	The University of Queensland

Project Summary

This project will enhance mutual understanding within multicultural Australia: (1) helping community leaders seeking to apply the lessons of Israeli to the revival of no-longer spoken Australian languages; (2) assisting local Jews to explore their roots and substantially improving Israeli and Hebrew teaching methodologies at universities and Jewish schools in Australia. Globally, the project will enhance Australia's understanding of social, political and cultural conditions in the Middle East, by facilitating a clearer and more complex understanding of the languages and politics in the region. It will therefore make a valuable contribution to the war against terrorism, now the major threat to national security.