Victoria

Monash University

LP0774893 A/Prof M Aguilar; Dr J Popplewell

Approved Project Title **New Membrane Chips For Protein Interaction Analysis**

2007 : $ 70,000
2008 : $ 70,000
2009 : $ 70,000
Primary RFCD 2499 OTHER PHYSICAL SCIENCES

Collaborating/Partner Organisation(s)

Farfield Scientific Limited
ATA Scientific
Administering Organisation Monash University

Project Summary

This proposal is based on a strategic partnership between Monash University and Farfield Sensors. We will create a series of new biosensors that will be used to establish a new approach to the structural analysis of membrane protein function. In particular, this technology may lead to the identification of new proteins and drug targets for therapeutic development. The long-term outcome would be the development of improved therapeutics which would be coupled to potential economic returns when further commercialisation is achieved.

LP0774834 A/Prof F Burstein; A/Prof L Churilov; A/Prof A Zaslavsky; A/Prof J Wassertheil; Prof PA Arbon

Approved Project Title **Context-aware mobile decision support systems for medical emergency management in mass gatherings**

2007 : $ 52,000
2008 : $ 52,000
2009 : $ 52,000
Primary RFCD 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Intel Australia
Administering Organisation Monash University

Project Summary

This project contributes to gaining a clearer understanding of the nature and requirements of medical emergency during mass gathering events. We will build and test a mobile real time decision support tool for improving efficiency of medical decisions to strengthen Australia's ability to manage potential health- related hazards. This project addresses research priorities of promoting and maintaining good health. It capitalizes on smart information use and will be of great benefit to mass gatherings emergency management. This project will also train highly qualified IT specialists critical to Australia's scientific and industrial development, thus increasing our competitiveness in information technology R&D.

LP0774944 Prof MP Georgeff; A/Prof DA Campbell; Prof HW Schmidt; Dr S Thompson; Prof GI Webb

Approved Project Title **Intelligent Collaborative Care Management**

2007 : $ 180,000
2008 : $ 160,000
2009 : $ 140,000
Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

Collaborating/Partner Organisation(s)

British Telecommunications PLC
Administering Organisation Monash University

Project Summary

The project will provide the basis for new models of consumer care in both social and commercial settings. In a commercial setting, customer care means looking after the customer, with the hope of retaining their business. By developing a formal model of evidence-based care, together with the information technologies to implement this model, the project will result in higher quality, safer, more efficient and more effective care. This will produce significant economic and social benefits for Australia across a wide range of service industries. The project will also generate export opportunities for information technology services and products in health care and other service industries. In addition, it will drive collaboration with leading global businesses, providing new paths to market for Australian research, technologies and innovations.

LP0774941 Dr RM Gleadow; Prof JD Hamill; Prof BL Moeller

Approved Project Title **Molecular, physiological and environmental regulation of toxic prussic acid levels (cyanogenesis) in forage sorghum.**

2007 : $ 70,000
2008 : $ 70,000
2009 : $ 70,000
Primary RFCD 2708 BIOTECHNOLOGY

Collaborating/Partner Organisation(s)

Pacific Seeds
Administering Organisation Monash University

Project Summary

Forage sorghum is grown widely in dry, tropical areas of Australia. The leaves contain dhurrin, a natural defence product that liberates prussic acid (cyanide) when leaf tissue is disrupted (eg when chewed). The problem is that young plants or those experiencing drought are highly toxic, resulting in financial loss through reduced nutritive value, livestock loss and wasted feed. Using new, non-GM technology we will identify novel genetically altered sorghum lines with negligible prussic acid. Lines with enhanced levels could be used as soil biofumigants. Breeders can use this germplasm to develop varieties tailored for increasingly dry Australian conditions. The new varieties with controlled dhurrin content will be suitable for export.

LP0775322 Prof C Li

Approved Project Title **Production of diesel from the catalytic pyrolysis of waste plastics**

2007 : $ 234,484
2008 : $ 218,921
2009 : $ 135,921
Primary RFCD 2906 CHEMICAL ENGINEERING
APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Ozmotech Pty Ltd
Administering Organisation Monash University

Project Summary

Large amounts of waste plastics go to landfill daily. Landfill simply buries our wastes for future generations and can contribute to the contamination of ground water. This project aims to develop an advanced pyrolysis technology to produce transport diesel from waste plastics. This technology is an economically attractive and environmentally friendly way for the disposal of waste plastics without any environmental problems associated with the landfill or direct incineration of waste plastics. As this technology is based on advances in Australian research and development, exporting this to other countries will further enhance its economic and social benefits to Australia.

LP0775329 Dr D Liew; A/Prof C Reid; Dr AJ Owen; A/Prof JE Shaw; Dr DJ Magliano

Approved Project Title **Epidemiological modelling of cardiovascular disease and diabetes in Australia**

2007 : $ 67,000
2008 : $ 70,000
2009 : $ 75,000
Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

sanofi-aventis
Administering Organisation Monash University

Project Summary

With Australia's population ageing and becoming increasingly obese, cardiovascular diseases and diabetes are predicted to be a massive burden on our already stretched health system. Preventing the onset of disease is clearly the best management strategy, but we also need effective treatment strategies for those with these diseases, and we need to ensure that we are spending our healthcare dollars in the most effective and cost-effective manner to achieve these aims. This research will evaluate how best to do this in a specifically Australian context.

LP0775283 Dr K Lynch; Dr HJ Bowe

Approved Project Title **Reclamation of Victorian Indigenous languages: Using ICT to enable effective exchange between academics, educators and the Indigenous community**

2007 : $ 80,865
2008 : $ 68,085
Primary RFCD 4201 LANGUAGE STUDIES

Collaborating/Partner Organisation(s)

Department of Education & Traning, Multicultural programs Unit
Victorian Curriculum & Assessment Authority
Victorian School of Languages
Worawa Aboriginal College
Victorian Aboriginal Corporation for Languages Inc
Barenji Gadjin Land Council
Mirrimbeena Aboriginal Education Group Inc
Cyber Dreaming
Networking Communities
Federation of Aboriginal and Torres Strait Islander Languages
Administering Organisation Monash University

Project Summary

The project will exploit online technologies to provide centralised resources for the Indigenous languages of Victoria. The use of modern Information and Communication Technology (ICT) to present a non-threatening and personalised interface to the resources will connect people and materials, and breathe new life into these ancient languages of such contemporary, social and cultural significance. This 'living system' of language information and exchange, built on pure linguistic research will have wide value. It will be of crucial benefit in rural and regional areas. The project will also encourage intergenerational communication within Indigenous families and will improve awareness and appreciation of Indigenous languages.

LP0775035 A/Prof CJ Mews; Prof M Ariff; Prof M Skully; Dr AR Ghouse; Dr D Bakar; Prof A Saeed

Approved Project Title **Religion, Finance and Ethics: Islamic and conventional perspectives on shared principles, practices, and financial institutions and instruments**

2007 : $ 52,000
2008 : $ 54,000
2009 : $ 52,000

Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Muslim Community Co-Operative (Australia) Ltd
Amanie Business Solutions Sdn. Bhd
MacPherson + Kelley lawyers
Australian Financial Investment Group Ltd

Administering Organisation Monash University

Project Summary

By linking together specialists in finance, banking and religious history, with the Muslim Community Cooperative (Australia), this project explores communication and mutual benefit between international Islamic finance and conventional Western finance. It will propose new financial structures and instruments to expand the scope of Islamic finance, to maximise lending and investment opportunities in Australia, and to promote interaction between the Islamic and conventional financial sectors. The project will enable Australian researchers to work with international authorities in Islamic finance, promoting dialogue between Islamic and other groups, and increase investment and development within the Australian financial market.

LP0774829 Prof JR Ogloff; Dr SD Thomas; Prof PE Mullen; Dr PM Martin; Dr JA Clough; Dr CS Tye; Mr AE Dickinson; Mr KD Lay; Prof J Pfeifer

Approved Project Title **Policing services and the mentally ill: An evidence-based good practice model**

2007 : $ 202,102
2008 : $ 150,000
2009 : $ 162,644
2010 : $ 118,912
2011 : $ 74,689

Primary RFCD 3904 LAW ENFORCEMENT

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Victoria Police

Administering Organisation Monash University

Project Summary

Community safety is at the forefront of policing policy and procedure. As gatekeepers to the criminal justice (and to a lesser extent the mental health) systems, the police play a pivotal role in promoting and maintaining the health, safety and wellbeing of the community. This programme of research will provide much needed quality information and empirical evidence about the current practices, policies, and procedures for dealing with the mentally ill who come into contact with the police. In a broader sense the research will have dramatic, wide-reaching practical outputs for all of Australia, and help contribute to increased levels of community safety and reduced levels of victimisation of some of the most vulnerable in our society.

LP0774970 A/Prof CJ Porter; Dr BJ Boyd; Dr GY Krippner

Approved Project Title **Rational Design of Pegylated Dendrimer Nanostructures for Site Specific Drug Delivery**

2007 : $ 85,466
2008 : $ 80,466
2009 : $ 80,466
Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Collaborating/Partner Organisation(s)

Starpharma Pty Ltd
Administering Organisation Monash University

Project Summary

This project will provide technological advances with significant benefits in terms of improved drug treatment, and therefore health outcomes for Australia. The project builds on areas of research strength in Australia (nanotechnology and biotechnology/biomaterials) and will add considerably to the expanding Australian expertise-base in dendrimer technology (in which it is a world leader). The interdisciplinary nature of this project will also result in a unique training program for the researchers included in this grant. Such experience is in great demand, particularly in Australia where the burgeoning start-up discovery industry is critically short of personnel with skills in drug delivery.

LP0775530 Prof CW Pouton; Dr JM Haynes; Dr P Bello

Approved Project Title **Functional characterisation of neurons derived from embryonic stem cells and NS cells**

2007 : $ 31,118
2008 : $ 31,118
2009 : $ 31,118
Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Collaborating/Partner Organisation(s)

Stem Cell Sciences Ltd
Administering Organisation Monash University

Project Summary

The ability to obtain specific neurons from NS cells will revolutionise the study of nerve function, will allow the establishment of much-improved models for discovery of new drugs, and will define how enriched populations of neural cells can be obtained for applications in treatment of neurodegenerative diseases. The project will provide vital data for the emerging biotechnology industry associated will applications of stem cell biology, and will stimulate clinical researchers to investigate the therapeutic potential of cell derived from NS cells.

LP0774947 Dr RD Reina; Mr TI Walker

Approved Project Title **Capture stress and post-capture survival of sharks and other chondrichthyans in fisheries bycatch**

2007 : $ 46,687
2008 : $ 33,740
Primary RFCD 3007 FISHERIES SCIENCES

Collaborating/Partner Organisation(s)

Department of Primary Industries
Administering Organisation Monash University

Project Summary

Australia is adopting ecosystem approaches to fisheries management. However, to embrace such an approach there is an urgent need for better information on the biology, ecology and population dynamics of sharks, rays and chimaeras (class Chondrichthyes). Chondrichthyan species are among the most sensitive in their response to the effects of fishing. Results from the present proposal will contribute to determining mortality of chondrichthyan bycatch species in response to the effects of capture in fishing gear, handling by fishers and discarding at sea. The work will contribute to biodiversity conservation and maintenance of ecosystem structure and function for present and future generations.

LP0774874 Dr AJ Robinson; Dr BG Livett

Approved Project Title **Structural modification of conus-derived venom peptides- A route to new therapeutics**

2007 : $ 140,000
2008 : $ 140,000
Primary RFCD 2503 ORGANIC CHEMISTRY

Collaborating/Partner Organisation(s)

Polychip Pharmaceuticals Pty Limited
Administering Organisation Monash University

Project Summary

Current product deficiencies in the area of pain management are forcing the pharmaceutical industry to develop new strategies for achieving analgesia and reduce their dependence on traditional, addictive opiate-based products. Structural modification of Conus derived peptides will provide exciting new leads for achieving effective analgesia.

LP0775192 Dr MJ Scanlon; Dr DK Chalmers; Dr DI Rhodes; Prof MW Parker; Dr J Deadman

Approved Project Title **Therapeutic approaches to treat human immunodeficiency virus infection: development of HIV-1 integrase inhibitors**

2007 : $ 134,125
2008 : $ 123,438
2009 : $ 119,950
Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Collaborating/Partner Organisation(s)

Avexa
Administering Organisation Monash University

Project Summary

This project aims to assist the development of new anti-HIV drugs, which would benefit the 15000 Australians and over 40 million people worldwide who are currently infected with this terrible disease. The project will utilise state of the art technologies - including the Australian Synchrotron when it is commissioned in 2007 - to identify and synthesise compounds as new leads for the treatment of HIV.

LP0775375 Prof PA Sullivan; Prof DM Clarke; A/Prof BA Clarke

Approved Project Title **Examining the relationship between the documented curriculum, classroom tasks, and the learning of mathematics**

2007 : $ 134,000
2008 : $ 137,000
2009 : $ 139,000
Primary RFCD 3303 PROFESSIONAL DEVELOPMENT OF TEACHERS

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Catholic Education Commission of Victoria
Department of Education & Training, Victoria
Administering Organisation Monash University

Project Summary

There is an obvious connection between maximizing mathematics learning of young people and the nation's future. Currently many young people are missing opportunities for learning mathematics at school, and this not only reduces their own opportunities, but also increases their risk of long term dependence on government services. At the same time, mathematics is increasingly necessary for tertiary study in a range of fields, and the number of students choosing the highest level of mathematics is declining. The project will evaluate the types of tasks that teachers can use to engage all students in learning mathematics effectively, while preserving options for those students who may choose to specialise in tertiary mathematics study.

LP0775412 Dr PF Thomson

Approved Project Title **The effect of roll slip on the crystallographic texture of a hot-rolled aluminium alloy sheet**

2007 : $ 30,118
2008 : $ 25,118
2009 : $ 25,118
Primary RFCD 2913 METALLURGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Alcoa Australia Rolled Products
Administering Organisation Monash University

Project Summary

The project will assist in improving the technology of manufacture of aluminium can body-stock, a large industry world-wide and help to keep Australian manufacture competitive with the overseas product. Because the Industry Partner has manufacturing activities in regional centres, it will also assist in strengthening regional industry.

LP0775020 Prof P Vickers-Rich; Dr TH Rich

Approved Project Title **A New Approach to the Collection of a Large Suite of Dinasour Specimens**

2007 : $ 47,713
Primary RFCD 2601 GEOLOGY

Collaborating/Partner Organisation(s)

Big Island Pictures
Administering Organisation Monash University

Project Summary

Monash University and the University of Alaska, Fairbanks, propose to cut of a tunnel in permafrost on the North Slope of Alaska during the early Spring. This is expected to lead to the acquisition of a new assembly of dinasour fossils. An important aspect of the project is its sponsorship by Big Island Pictures, Brisbane, who will produce a documentary about this unique experiment in palaeontological engineering. This novel approach to recovering dinosaurs will lead to a new and perhaps more complete assemblage of specimens, whilst attracting a vast audience and conveying to the public how innovative science is done. The public interest is attested to by the consortium of sponsors that has been assembled by Big Island Pictures including major television stations in Australia, USA, England, France, and Germany and the Film Finance Corporation of Australia.

LP0775304 Dr DJ Wilson; Dr AC Sutton; Mr AE Dickinson; Mr AM Kennedy; Prof W Skogan

Approved Project Title **The police role in victim and witness support: researching a best practice model**

2007 : $ 43,808
2008 : $ 47,308
2009 : $ 57,308
2010 : $ 48,718
Primary RFCD 3904 LAW ENFORCEMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Victoria Police
Administering Organisation Monash University

Project Summary

The experience of victims and witnesses is instrumental in building public confidence in the criminal justice system. Negative experiences with the agencies of criminal justice reduce not only the likelihood that individuals will engage in future, but also the likelihood of their friends and families doing so. The experience of victims and witnesses is therefore central to the creation of an inclusive and participatory criminal justice system. This project aims to strengthen public participation and trust in criminal justice agencies by developing transferrable research-based service delivery systems that better meet the needs of victims and witnesses.