

Summary of Linkage Projects Proposals for Funding to Commence in 2009

Victoria

Monash University

LP0990408 Prof AE Benjamin; Prof S Goldhill; Prof L Hardwick; Mr S Armstrong; Mr MP Kantor; Ms MH Lynch; Ms CM Potts; Dr J Griffiths; Prof E Hall; Dr ML Reynolds

Approved Project Title **Staging Sappho: investigating new methodologies in Classical Performance Reception**

2009 : \$ 65,000

2010 : \$ 105,000

2011 : \$ 85,000

2012 : \$ 45,000

Primary RFCD 4202 LITERATURE STUDIES

APDI Dr J Griffiths

Collaborating/Partner Organisation(s)

Malthouse Theatre

Administering Organisation Monash University

Project Summary

This project will make a significant contribution to Australia's profile as a research innovator in Arts and Humanities. It is the first research project of its kind to integrate theories of Classical reception and textual transmission with performance theory and practice. As such, it will further the knowledge base of the discipline of Classical Reception Studies by introducing a new methodology to the field, and will also benefit the community in terms of cultural engagement.

LP0990127 Dr N Birbilis; Dr CR Hutchinson; Dr TJ O'Brien; Dr IQ Song; Mr H Parikh; Dr B Trautman

Approved Project Title **Development of corrosion resistant aluminium alloys for potable water systems**

2009 : \$ 30,000

2010 : \$ 60,000

2011 : \$ 60,000

2012 : \$ 30,000

Primary RFCD 2914 MATERIALS ENGINEERING

Collaborating/Partner Organisation(s)

Fortune Brands Home & Hardware, Inc

Administering Organisation Monash University

Project Summary

Maintaining Australia's operational advantage through superior capabilities is fundamental to national benefit. This project fosters breakthrough science to underpin technological innovation (new materials with enhanced functionality). In a global market, any promotion of aluminium usage provides direct benefit nationally, Australia being the key primary, secondary and tertiary producer. Aluminium exports are critical to the ongoing success of the Australian economy. This project provides excellent research training with unique industry focus for young researchers, fostering the international competitiveness of local research. Such work also benefits Australia via development of international capability in an interdisciplinary field.

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LP0991494 Dr BJ Boyd; A/Prof DM Cahill; Dr IC Larson; Mr P Hay

Approved Project Title **Nanostructured liquid crystal particles as Next Generation agricultural bioactive delivery systems**

2009 : \$ 49,500

2010 : \$ 102,500

2011 : \$ 109,500

2012 : \$ 56,500

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Nufarm Limited

Administering Organisation Monash University

Project Summary

Improving the efficiency of use of agricultural chemicals, through utilization of novel liquid crystalline carriers particles, will deliver significant environmental and economic benefits. Reduced overall usage and input of chemicals into the environment, together with lower water consumption in the treatment of crops will contribute to an Environmentally Sustainable Australia, with benefits in reduced salinity. More economical farming will also lead to flow on benefits to other businesses in rural communities. The project will also enhance Australia's reputation in the uptake of nanotechnologies, and in training of young scientists in the nanotechnology field.

LP0991977 Dr B Capuano; Prof PJ Scammells

Approved Project Title **The Synthesis and Pharmacological Evaluation of Novel Bivalent Dopamine D2 and Adenosine A2A Ligands for the Treatment of Parkinson's Disease**

2009 : \$ 13,070

2010 : \$ 26,140

2011 : \$ 26,140

2012 : \$ 13,070

Primary RFCD 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

GSK Centre for Cognitive and Neurodegenerative Disorders

Administering Organisation Monash University

Project Summary

This program will significantly contribute to the training of highly qualified personnel in the area of organic and medicinal chemistry where there is currently a national shortage. Other benefits are the capacity to advance this critical research in PD and potentially provide substantial national competitive advantages and growth opportunities in the global anti-Parkinsonian therapeutics market.

LP0991254 Dr PL Cook; Prof BD Eyre; Dr MR Grace; Mr G Rooney; Dr MR Hipsey

Approved Project Title **Unraveling the nitrogen cycle in a periodically anoxic estuary**

2009 : \$ 40,000

2010 : \$ 72,500

2011 : \$ 65,000

2012 : \$ 32,500

Primary RFCD 2603 GEOCHEMISTRY

Collaborating/Partner Organisation(s)

Melbourne Water

EPA Victoria

Administering Organisation Monash University

Project Summary

Climate change is likely to lead to reduced river inflows to estuaries which can lead to oxygen depletion and major changes in nutrient cycling. This project will help inform the public and policy makers about the role of environmental flows in maintaining estuarine function, and thus guide future decisions on environmental flow requirements in the Yarra River Estuary. The benefits of this understanding will also flow on to improved understanding and management of nitrogen loads to Port Phillip Bay. This project will form a close collaborative partnership between Monash University, Melbourne Water and the EPA. This collaboration will ensure the integration of cutting edge science with innovative management regimes

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LP0990153 Dr TD Fletcher; Dr BE Hatt; Dr PL Cook; A/Prof A Deletic; A/Prof J Read; Dr I Cartwright

Approved Project Title **Understanding the role of vegetation in nitrogen removal by biofiltration**

2009 : \$ 28,000

2010 : \$ 56,000

2011 : \$ 54,500

2012 : \$ 26,500

Primary RFCD 2908 CIVIL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Melbourne Water Corporation

Department of Water

Administering Organisation Monash University

Project Summary

Many of Australia's bays and waterways are threatened by eutrophication due to excess nitrogen loads, particularly from urban stormwater. Biofiltration systems are a widely used (Melbourne Water alone has a programme of constructing 10000 systems in partnership with municipalities over the next 5 years) and potentially effective treatment, but their nitrogen removal is highly dependent on the type of vegetation used. This project will improve the understanding of the role of vegetation in nitrogen retention by stormwater biofilters, and will thus provide important guidance on plant selection and design for biofiltration.

LP0990526 Prof GB Garnier; Dr WJ Batchelor; Dr W Shen; Prof GP Simon

Approved Project Title **Self Assembling Polymers for Novel Packaging Products**

2009 : \$ 70,000

2010 : \$ 144,000

2011 : \$ 154,000

2012 : \$ 80,000

Primary RFCD 2914 MATERIALS ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Visy

Nopco Paper Technology

Administering Organisation Monash University

Project Summary

Have you had wet paper bags rip or stacks of boxes collapse during shipping? Novel polymer strength agents will be combined with nanoparticles to develop very strong paper packaging meeting Australia's needs. We will produce very strong paper packaging resisting frequent moisture changes while remaining fully recyclable. These strength agents will be produced and used in Australia to manufacture the fibre packaging needed to ship our manufactured and agriculture goods within Australia and for export. The Paper industry is the largest manufacturing industry in rural Australia with sales of \$4 billion and 5,900 direct and 85,000 indirect jobs.

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LP0991735 Prof MT Hearn; Prof L Spiccia; Dr RI Boysen; Dr K Saito; Dr CB Schiodt; Dr A Staby; Dr C Jespersgaard; Mr BR Nielsen; Mr H Valore

Approved Project Title **Multipurpose separation platforms for protein purification**

2009 : \$ 145,000

2010 : \$ 275,000

2011 : \$ 230,000

2012 : \$ 100,000

Primary RFCD 2708 BIOTECHNOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Novo Nordisk Pharmaceuticals Pty Ltd

Administering Organisation Monash University

Project Summary

Over the next decades, many new therapies and products will be needed to enhance the quality of human life. Biopharmaceuticals and other protein-based products will thus be increasingly in demand. This will require significant improvements in biotechnological procedures, particularly sophisticated purification technologies. Through the development of a novel technology, this project is anticipated to significantly contribute to these societal needs and provide a new way to purify these important molecules. National and community benefits will accrue from this scientific innovation and from its application, which is expected to provide more efficient manufacturing opportunities for key biotechnology industries.

LP0990993 Prof JJ Hocking

Approved Project Title **Gough Whitlam: A Living Democracy**

2009 : \$ 29,000

2010 : \$ 63,000

2011 : \$ 59,500

2012 : \$ 25,500

Primary RFCD 4301 HISTORICAL STUDIES

Collaborating/Partner Organisation(s)

National Library of Australia

National Archives of Australia

Administering Organisation Monash University

Project Summary

This project will contribute to knowledge of a significant public figure, the former Labor Prime Minister, Gough Whitlam, his government and his life after politics. This second volume of the Whitlam biography will complete the definitive, contemporary, biographical study of him. It will create an original store of knowledge through its extensive interviews with key individuals including Gough Whitlam that will augment the Oral History collection held by the National Library of Australia. The project will also generate a unique multimedia platform for researchers to access digitized research materials repurposed through the Whitlam section of the Prime Ministers web-site with the National Archives of Australia.

Summary of Linkage Projects Proposals for Funding to Commence in 2009

LP0991435 Dr NC Karmakar; Dr R Karthikeyan

Approved Project Title **Back-scatter based Radio Frequency IDentification (RFID) system capable of reading multiple chipless tags for regional and suburban libraries**

2009 : \$ 67,500

2010 : \$ 135,000

2011 : \$ 130,000

2012 : \$ 62,500

Primary RFCD 2917 COMMUNICATIONS TECHNOLOGIES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Express Promotions

Administering Organisation Monash University

Project Summary

Australia has the highest rate of library usage among the developed countries. However, only a few libraries in Australia use RFID based library management system. The main hindrance is the cost of the tag compared to the optical barcode. The project addresses the problem by offer a smart RFID reader which can read multiple chipless RFID tags. The results of the project will bring Australia on a cutting edge technology and serving the community better with state-of-the-art RFID based library management system. Also export of the technology will put Australia in the forefront of the RFID applications.

LP0990168 Prof SY Kneebone

Approved Project Title **Delivering Effective Protection to Victims and Prevention of Human Trafficking in the Greater Mekong Sub-Region**

2009 : \$ 26,000

2010 : \$ 50,000

2011 : \$ 49,000

2012 : \$ 25,000

Primary RFCD 3903 JUSTICE AND LEGAL STUDIES

Collaborating/Partner Organisation(s)

Australian Agency for International Development (AusAID)

United Nations Inter-Agency Project on Human Trafficking in the Greater Mekong Sub-region (UNIAP)

International Organization for Migration (IOM)

Administering Organisation Monash University

Project Summary

The project will help safeguard Australia by improving our understanding of the nature of human trafficking in the Asia-Pacific region through victims' profiles and about what preventive measures work best. It will focus upon capacity building and co-ordination of NGO-State responses. It will contribute to Australia's continuing reputation as regional leader on these issues, by focusing on high quality research to inform policy development and practice on aid effectiveness in the area of counter-human trafficking. This is expected to lead to significant social and economic benefits through building upon existing cooperative relationships.

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LP0991316 Dr RY Lapovok; Prof YS Estrin; Prof MA Lewandowska

Approved Project Title **Hydro Equal Channel Angular Pressing (ECAP) - the way to industrial processing**

2009 : \$ 42,500

2010 : \$ 85,000

2011 : \$ 85,000

2012 : \$ 42,500

Primary RFCD 2903 MANUFACTURING ENGINEERING

Collaborating/Partner Organisation(s)

Warsaw University of Technology, Faculty of Materials Science and Engineering

Materials Engineers Group

Wallace Eng (Vic) Pty Ltd

Administering Organisation Monash University

Project Summary

Australia has rich resources in aluminium, titanium and magnesium. It is of strategic national importance to Australia to change from being an exporter of metals to becoming a purveyor of technology and high-end manufactured products. To compete in the global market, Australia needs to be in a leading position in production of light alloy components for automotive, aerospace, electronic, and bio-medical applications. The establishment of industrially viable Hydro-ECAP technology for production of bulk ultrafine grained light alloys with superior mechanical properties will lead to a major breakthrough in the use of such materials and will help transforming Australia's metal forming companies to future-oriented manufacturing industries.

LP0990141 A/Prof A Marsh; Dr D Palmer; Dr MK Miles; Dr M Davison

Approved Project Title **Photography as a Crime**

2009 : \$ 17,500

2010 : \$ 35,000

2011 : \$ 35,000

2012 : \$ 17,500

Primary RFCD 4102 VISUAL ARTS AND CRAFTS

Collaborating/Partner Organisation(s)

Centre for Contemporary Photography

Administering Organisation Monash University

Project Summary

This project refers specifically to the goal: Strengthening Australia's Social and Economic Fabric. By investigating the changing nature of public photography, this research will contribute to mapping contemporary transformations in the configuration and occupation of public space. Shared participation in public spaces is crucial to a healthy society, and to fostering social connectivity by enabling us to build empathetic connections with each other. The ability to understand the society in which we live is also central to a safe and secure Australia. Thus, this project will also contribute to Safeguarding Australia, by enhancing the priority goal of Understanding our Region and the World.

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LP0990348 Dr BG Naylor; Prof MJ Pittard; Dr G Heydon; A/Prof M Paterson

Approved Project Title **Living Down the Past: Criminal Record Checks and Access to Employment for Ex-offenders**

2009 : \$ 21,000

2010 : \$ 34,000

2011 : \$ 27,000

2012 : \$ 14,000

Primary RFCD 3903 JUSTICE AND LEGAL STUDIES

Collaborating/Partner Organisation(s)

Corrections Victoria

Fitzroy Legal Service Inc

Job watch Inc

Victorian Equal Opportunity and Human Rights Commission

Victorian Association for the Care and Resettlement of Offenders (VACRO)

Australian Human Rights Commission

Administering Organisation Monash University

Project Summary

This project will introduce increased certainty as to the rights and obligations of Australian employers and employees in the use of criminal records checks. It will have significant economic and social benefits for Australia, by helping to reduce the inappropriate exclusion of ex-offenders from employment; improving the rehabilitation of ex-offenders through facilitating their employment opportunities and lowering rates of recidivism. Other outcomes will be to maximise Australia's labour supply and support efforts to prioritise social inclusion on the national agenda. The project will assist Australia to meet its international obligations and address human rights principles in relation to employment.

LP0990186 Dr J Nie; Dr X Xiong; Adj/Prof MJ Couper

Approved Project Title **Strength Enhancement of Aluminium Extrusion Alloys via Novel Thermal Processes and Alloy Composition Control**

2009 : \$ 37,500

2010 : \$ 75,000

2011 : \$ 75,000

2012 : \$ 37,500

Primary RFCD 2913 METALLURGY

Collaborating/Partner Organisation(s)

Rio Tinto Alcan

Administering Organisation Monash University

Project Summary

The aluminium industry in Australia produces ~4% of total goods and services exports nationally and over \$2 billion per year in export earnings. The importance of developing energy-efficient processing and manufacturing technologies for aluminium and its alloys is reflected in the Federal Government's Light Metals Action Agenda. The proposed project has the potential to establish a platform for intelligent design and development of thermal processing technologies for aluminium extrusion alloys with improved mechanical properties. Such technologies are expected to help the Australian aluminium industry to expand its international market share.

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LP0991126 Prof PJ Scammells; Dr B Capuano

Approved Project Title Applications of the Polonovski Reaction in the Synthesis of Bioactive Opiates

2009 : \$ 13,070
2010 : \$ 26,140
2011 : \$ 26,140
2012 : \$ 13,070

Primary RFCD 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

GlaxoSmithKline

Administering Organisation Monash University

Project Summary

This program will contribute to the training of highly qualified personnel in the area of organic and medicinal chemistry. It will also address the development of improved processes for the large scale preparation of semi-synthetic pharmaceutical opiates in support of one of Australia's important export industries. Furthermore, a greater understanding of the structure-activity relationships of noscapine will make a contribution to the overall search for improved anti-cancer agents.

LP0990166 Dr MJ Scanlon; Prof JL Martin; Prof WN Charman; Dr JS Simpson; Prof RL Nation; Dr CJ Morton

Approved Project Title Targeting virulence of *Pseudomonas aeruginosa* by inhibiting oxidative protein folding

2009 : \$ 90,000
2010 : \$ 190,000
2011 : \$ 210,000
2012 : \$ 110,000

Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Collaborating/Partner Organisation(s)

Biota Holdings Ltd

Administering Organisation Monash University

Project Summary

Our research will lead to the development of compounds with a novel anti-virulence/antibacterial mode of action for further drug development.

LP0991170 Prof J Sheridan; Prof MC Thompson; Mr S Juricic

Approved Project Title The development of active third-generation heavy vehicle aerodynamic drag reducing devices to reduce future transport emissions.

2009 : \$ 60,000
2010 : \$ 125,000
2011 : \$ 115,000
2012 : \$ 50,000

Primary RFCD 2902 AEROSPACE ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

MaxiTRANS Australia Pty. Ltd.

Administering Organisation Monash University

Project Summary

The potential for emission reductions through aerodynamic improvements is particularly apparent in long haul heavy vehicle transport. By developing active devices to be fitted to the heavy vehicle trailer of the future this work offers drag reduction potential from current levels of up to 40 per cent. If widely implemented these devices could play a major part in the transport sector meeting medium term emissions targets. If successful not only will the project develop unique components, it will support heavy vehicle research and development that is so important to maintaining a strong manufacturing presence in Australia, especially in regional centres, such as Ballarat where Maxitrans has major headquarters.

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LP0990157 Dr SD Thomas; Dr MD Daffern; Prof JR Ogloff; Prof PE Mullen; Dr LS Webber; Mr AE Dickinson

Approved Project Title Intellectual disability, victimisation, challenging behaviour and offending

2009 : \$ 26,150

2010 : \$ 60,713

2011 : \$ 61,953

2012 : \$ 27,390

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Office of the Senior Practitioner

Victoria Police

Statewide Forensic Service

Administering Organisation Monash University

Project Summary

The expected national benefits that will arise from this research will include significant advances to policy and practice in the field, which will impact on service users and service providers at both individual and community levels. At the same time, this unique collaboration will foster research excellence, further develop interagency collaborations and thus advance Australia's research and clinical leadership in the field of intellectual disability and community safety. Taken altogether, this research has a strong potential to lead to further collaborations focussing on research priorities of national and international significance.

LP0990577 A/Prof DP Wright-Neville; Dr PN Lentini; Dr SA Moss; Dr GJ Ilardi

Approved Project Title Radicalisation, Counter-Radicalisation, and De-Radicalisation: Developing a New Understanding of Terrorism in the Australian Context

2009 : \$ 94,275

2010 : \$ 219,275

2011 : \$ 267,500

2012 : \$ 222,782

2013 : \$ 80,282

Primary RFCD 3801 PSYCHOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Dept of Premier & Cabinet

Victoria Police

Australian Federal Police

Dept of Justice

Administering Organisation Monash University

Project Summary

Concentrating on the unique drivers of extremism within Victoria (and Australia), the study will enhance counter terrorism stakeholders' understanding of domestic radicalization. This will assist in designing policies appropriate for Australian circumstances that can: 1. pre-empt, prevent and detect radicalisation without jeopardising social cohesion and 2. reduce Australia's reliance on overseas counter-radicalisation and de-radicalisation models, where practitioners confront different community dynamics. Working towards understanding what causes radicalization in Australia, the project offers to enhance national security and by addressing local circumstances carries the prospect of creating more cost-efficient counter terrorism practices.