

Summary of Linkage Projects Proposals for Funding to Commence in 2008

New South Wales

The University of Sydney

LP0882396 Dr RC Appleyard; A/Prof AJ Ruys; Dr Q Li; Prof MV Swain

Approved Project Title **Computer simulation techniques to reduce the incidence of femoral fracture after hip replacement surgery**

2008 : \$ 88,987

2009 : \$ 47,900

2010 : \$ 42,160

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Stryker Pty. Ltd.

Administering Organisation The University of Sydney

Project Summary

Australia's ageing population is driving an increase of 5% to 10% a year in the number of primary total hip replacements. We will move beyond conventional surgical techniques, to deliver the science for an accurate, reliable computer-based system that is significantly more accurate and reliable. Optimising implant selection criteria to better match patients' activity levels and bone physiology and minimise revision rates; this has major implications for the national health budget and patients' quality of life. Our advances will allow the implementation of improved surgical techniques that minimise the risk of implant related bone failure.

LP0882243 Prof MM Bilek; Prof AS Weiss; Prof DR McKenzie

Approved Project Title **Plasma processes for optimising the performance of surfaces for biomedical applications**

2008 : \$ 250,000

2009 : \$ 275,000

2010 : \$ 270,000

Primary RFCD 2403 ATOMIC AND MOLECULAR PHYSICS; NUCLEAR AND PARTICLE PHYSICS; PLASMA PHYSICS

Collaborating/Partner Organisation(s)

IFC Medical

Cochlear Ltd

Administering Organisation The University of Sydney

Project Summary

Australia faces a number of pressing problems in health care, including an aging population, environmental damage control and national security, which can be addressed, in part, by effectively interface synthetic materials surfaces with biological systems. Examples of technologies relying on such functional interfaces include implantable medical devices and prostheses, enzymatic conversion of chemicals and waste, as well as diagnostic arrays and biosensors. The new understanding of fundamental surface properties driving these interactions, together with the new surface modification processes developed in this project, will drive new technologies in these important areas.

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LP0882737 Dr SZ Bosnic-Anticevich; Prof C Armour; Ms M Williamson; Ms JM Mackson; Dr M Stuart

Approved Project Title **Improving asthma device use: Innovative models for inter-professional practice**

2008 : \$ 63,000

2009 : \$ 165,000

2010 : \$ 195,000

Primary RFCD 3801 PSYCHOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

National Prescribing Service

Administering Organisation The University of Sydney

Project Summary

This project falls within the goals of National Priority 2: promoting and maintaining good health. This project has the potential to affect every individual accessing health care in the Australia. Through its approach to and focus on improving the use of asthma medications this project will impact on: the quality use of medicines and health outcomes for patients. Through its focus on health professional relationships and interdisciplinary approach to community health care it will result in: improved interprofessional relationships and a model of collaboration which has the potential to be implemented on a broad scale in the community.

LP0882312 Dr A Dunn

Approved Project Title **New media, new narratives: Beyond broadcasting**

2008 : \$ 23,798

2009 : \$ 28,607

Primary RFCD 4001 JOURNALISM, COMMUNICATION AND MEDIA

Collaborating/Partner Organisation(s)

Australian Broadcasting Corporation

Administering Organisation The University of Sydney

Project Summary

This project investigates the cultural and social implications of the tension between new and traditional media, in a collaborative project with ABC News. It uses a new model of training journalism cadets- often the groundbreakers for the organisational cultural change needed in a world of convergent media-and demonstrates how media organisations can innovate in what they produce, how they produce it, and in their audience relations. The project will also demonstrate the important role of public broadcasting in new media innovation and in building new relationships with audiences.

LP0882983 Prof A Frino; Dr A Lepone; Prof JS Gans; Prof B Nalebuff

Approved Project Title **Understanding market mechanisms to achieve greater efficiency in the Australian residential real-estate market**

2008 : \$ 81,184

2009 : \$ 71,518

2010 : \$ 76,371

Primary RFCD 3402 APPLIED ECONOMICS

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Rismark International

Administering Organisation The University of Sydney

Project Summary

This project will provide information to policy-makers, vendors and purchasers, enabling the evolution of an optimal real-estate market, with significant benefits for individuals and the national economy. These benefits will be both short-term (current wealth) and long-term (retirement saving). It will promote Australia as the leader in constructing optimal, efficient real-estate markets, which can be applied to similar real-estate markets around the world. Finally, training a research student will develop research infrastructure in Australia, and be a contribution to producing a generation of specialists who will add to Australia's international standing in financial research and its ability to manage an increasingly complex economy.

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LP0882247 Prof DS Grant; Dr RW Hall; Dr NR Wailes; Dr KF Dery

Approved Project Title **Human resource information systems (HRIS) and the strategic significance of the human resource function**

2008 : \$ 50,000

2009 : \$ 50,000

2010 : \$ 50,000

Primary RFCD 3502 BUSINESS AND MANAGEMENT

Collaborating/Partner Organisation(s)

Australian Senior Human Resource Roundtable

Getronics Australia Pty Ltd

CSR Ltd

Boulderstone Hornibrook Pty Ltd

Australian Customs Service

Administering Organisation The University of Sydney

Project Summary

A large number of Australian organisations have invested in computer based HRIS. Used effectively, HRIS can allow HR to realise its strategic potential and to contribute to improved organisational performance. This project will contribute to the national research priority on frontier technologies, by enhancing understanding of the conditions that allow for smart information use, thereby contributing to the nation's economic competitiveness.

LP0883035 Prof IB Hickie; Dr JM Burns; Dr LA Ellis

Approved Project Title **Understanding and preventing mental health difficulties in young Australian men using the Internet**

2008 : \$ 114,140

2009 : \$ 116,620

2010 : \$ 127,100

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

APDI Dr LA Ellis

Collaborating/Partner Organisation(s)

Inspire Foundation

Administering Organisation The University of Sydney

Project Summary

Mental health is a major public health problem in Australia. Young men are particularly vulnerable to suicide, drug and alcohol problems and yet fail to seek appropriate help. The Internet is currently accessed by 85% of Australia's youth and yet very little evidence exists which examines the capacity of the Internet to engage young men and promote help seeking. This project will build an evidence base which explores how innovative on-line strategies and social marketing can effectively promote help seeking behaviour and improve mental health outcomes for young men.

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LP0882776 A/Prof JL Irwin; A/Prof E Baldry; Em/Prof T Vinson; Dr S Goodwin

Approved Project Title **Working from the Ground Up: A Participatory Approach to Community Regeneration in Public Housing Neighbourhoods.**

2008 : \$ 111,000

2009 : \$ 104,000

2010 : \$ 122,000

2011 : \$ 165,000

2012 : \$ 163,000

Primary RFCD 3701 SOCIOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Department of Housing

TAFE Equity, Department of Education and Training

Health Promotion Service, Division of Population Health South Eastern Sydney and Illawarra Area Heal

Administering Organisation The University of Sydney

Project Summary

This research will discover approaches, strategies and interventions that contribute to sustainable changes in public housing estates. It will trial interventions and develop quantitative tools. The outcomes of the project will include stronger, more cohesive communities, opportunities for residents to actively participate in their communities, and the development of services through partnerships between the communities and relevant government, non government and private organizations. This will enhance health and wellbeing and increase education and training opportunities for residents.

LP0882748 Prof HL Kendig; Dr YD Wells; Prof MP Wooden; Dr KM O'Loughlin; Prof DA De Vaus

Approved Project Title **Ageing Baby Boomers in Australia (ABBA): Informing Actions For Better Retirement**

2008 : \$ 162,194

2009 : \$ 136,734

2010 : \$ 176,734

Primary RFCD 3701 SOCIOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

National Seniors

AARP

Administering Organisation The University of Sydney

Project Summary

The research will improve understanding of baby boomers & inform action to achieve positive outcomes individually & for an ageing Australia. It will: 1)inform baby boomers of ways in which their actions in late middle age can increase the chance of having satisfying healthy lives in retirement; 2)inform employers & governments on key factors enabling people to work longer; 3)challenge stereotypes of baby boomers by showing their variability over the life course & in retirement; 4)provide four researchers with knowledge & expertise in applied, multi-disciplinary research on individual & population ageing; 5)identify baby boomers' expectations for themselves, governments, & the community to guide directions for Australia's response to ageing.

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LP0882799 A/Prof TA Langrish
Approved Project Title **Enhancing the Production of Functional Food Powders by Studying Reaction Processes in Spray Dryers**
2008 : \$ 31,627
2009 : \$ 31,627
2010 : \$ 38,627
Primary RFCD 2901 INDUSTRIAL BIOTECHNOLOGY AND FOOD SCIENCES
APA(I) Award(s): 1
Collaborating/Partner Organisation(s)
Lang Technologies Pty Ltd
Administering Organisation The University of Sydney

Project Summary

The project is a key component of a technical development program that has the potential to make a very large contribution to the processing of functional foods resulting in products of high value for nutritional use. The total national crop of cereals, pulses, oil seeds, fruit and vegetables is thirty million tonnes/year. Over three million tonnes/year of waste are produced, containing three million kilogrammes of bioactive compounds, valued at a minimum of \$1,000/kg, giving an estimated potential value of \$3 billion/year. If only 10% of this potential is captured, then the national benefit would be as high as A\$300 million/year.

LP0882801 A/Prof TA Langrish
Approved Project Title **Exploiting Resonance in Improving Dried Timber Quality by Optimizing Cyclic Drying Processes in Solar Kilns**
2008 : \$ 35,627
2009 : \$ 32,627
2010 : \$ 26,627
Primary RFCD 2906 CHEMICAL ENGINEERING
APA(I) Award(s): 1
Collaborating/Partner Organisation(s)
Australian Choice Timber Supplies Pty Ltd
Administering Organisation The University of Sydney

Project Summary

Maximizing the value of final dried timber is essential for maximizing the economic benefits for Australia. If 10% of one million cubic metres of sawn hardwood timber produced annually in Australia increases its value raised by \$500/m³, then the potential direct gain to Australian companies is over A\$50 million per year. Multiplier effects include future applications to the drying of foods, where the potential benefit in using solar kilns is a reduction in CO₂ emissions of at least a million tonnes of CO₂ per year, and a potential cost reduction of A\$38 million per year.

LP0882372 Dr CJ Lennings; Prof DT Kenny; A/Prof PJ Armati; Father CK Riley
Approved Project Title **Youth off the streets (YOTS): Rehabilitating at-risk youth and young offenders through responsive service learning programs**
2008 : \$ 60,000
2009 : \$ 65,000
2010 : \$ 65,000
Primary RFCD 3801 PSYCHOLOGY
Collaborating/Partner Organisation(s)
Youth Off The Streets
Administering Organisation The University of Sydney

Project Summary

Young people involved in substance abuse and delinquency are a major economic and social cost to Australia. Although numerous crime prevention strategies have been developed for working with at-risk, homeless, substance abusing and delinquent young people, few have been adequately evaluated and outcomes are poor. Almost none reflect contemporary knowledge in theories of adolescent development. This research will develop an innovative intervention based on Service Learning relevant to other diversion programs within Juvenile Justice and an industry model for long-term sustainable program evaluation. We will also develop an intervention model relevant to other organisations with similar aims and budgetary constraints.

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LP0883040 Dr G Macdonald; Dr AF Clarke

Approved Project Title **Indigenous Culture, Heritage and Economy in Rural NSW**

2008 : \$ 55,234

2009 : \$ 51,254

2010 : \$ 64,009

Primary RFCD 3703 ANTHROPOLOGY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Parkes Shire Council

Bogan River Wiradjuri Aboriginal Corporation

Administering Organisation The University of Sydney

Project Summary

Effective incorporation of Indigenous peoples into Australian social and economic life is a recognised national priority. A meaningful route is through Indigenous cultural heritage, an integral component of Australian identity. Through interdisciplinary pure research, enhanced by applied methodologies, this project will deliver knowledge and training to realise the value of local Indigenous cultural heritage for a rural area. It will culminate in Indigenous people developing roles that contribute directly to Shire and corporate interests. In making a significant contribution to the economic and social well-being of a particular rural area, the project has potential for adoption elsewhere.

LP0882082 Dr LE Semler; Prof P Gay; Dr KJ Flaherty

Approved Project Title **Innovative Approaches to Shakespeare and Literature Research in Australian Universities and Secondary Schools**

2008 : \$ 94,592

2009 : \$ 94,592

2010 : \$ 94,592

Primary RFCD 4202 LITERATURE STUDIES

APDI Dr KJ Flaherty

Collaborating/Partner Organisation(s)

Barker College

Administering Organisation The University of Sydney

Project Summary

Barker College and the University of Sydney unite in a major research initiative to tackle pressing issues in Australian humanities education with the express purpose of promoting an innovation culture and economy (National Research Priority 3, Goal 5). The project executes groundbreaking research into the teaching and learning of Shakespeare and the literary-critical skills of school and university students. The core research partnership, website and conference together deliver a shared-knowledge approach to determining innovative and effective new models for teaching and learning in the humanities. The project seeks wide participation from, and delivers diverse pedagogical benefits to, all Australian schools and universities.

LP0882054 A/Prof CJ Waldby; A/Prof I Kerridge; Prof L Skene

Approved Project Title **Human Oocytes for Stem Cell Research: donation and regulation in Australia**

2008 : \$ 76,000

2009 : \$ 80,000

2010 : \$ 59,000

Primary RFCD 3706 HISTORY AND PHILOSOPHY OF SCIENCE AND MEDICINE

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Westmead Fertility Services

Administering Organisation The University of Sydney

Project Summary

This study will contribute to the development of workable, ethical guidelines and practices for Australian research oocyte donation. It will contribute to the protection of women's health and autonomy and the design of sound donation practices and support services. It will contribute to the national and international debate about the ethics of stem cell research, and improve the knowledge base available to regulators and other stakeholders to frame adequate and comprehensive regulation.

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LP0883034 A/Prof PA Windsor; Dr ML Sheil; A/Prof PC Wynn

Approved Project Title **Topical and cryoanaesthesia for livestock husbandry**

2008 : \$ 160,000

2009 : \$ 160,000

2010 : \$ 160,000

Primary RFCD 3004 ANIMAL PRODUCTION

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Animal Ethics Pty Ltd

Bayer

Administering Organisation The University of Sydney

Project Summary

The livestock industries contribute \$15billion annually to Australia's economy, playing a vital role in rural communities. However we must respond to changing demands of our customers, by complementing our competitive disease-free advantage with welfare-conscious production systems. This project will address the threat of growing international demands for improved animal welfare in farming. We will provide research and technical solutions, providing pain management products for on-farm use that will reduce animal suffering during routine husbandry interventions. The project offers significant benefits for producers by protecting their industries against the threats of a welfare embargo on our livestock products.

LP0882691 Prof L Zhang; Dr DW Yuen; Dr ZJ Gu

Approved Project Title **Mechanisms of mixed lubrication in rolling**

2008 : \$ 112,224

2009 : \$ 118,353

2010 : \$ 125,475

Primary RFCD 2903 MANUFACTURING ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

BlueScope Steel Ltd

Administering Organisation The University of Sydney

Project Summary

Advanced manufacturing is always a major wealth-creating sector in developed economies. To catch up the revolution in rolling industry, Australia must develop her own technologies, train her own professionals of high competence, and thus increase her share in the international market. The proposed research will enhance Australia's record in production-orientated fundamental research in the field of metal rolling, and stimulate the growth of the world-class Australian industry, BlueScope Steel, and train young engineers most needed by the country. The research outcome will bring about long-term benefit to Australia.

LP0882791 Prof L Zhang

Approved Project Title **Non-destructive characterisation of residual stresses for the silicon-on-sapphire technology**

2008 : \$ 91,752

2009 : \$ 98,476

2010 : \$ 99,848

Primary RFCD 2903 MANUFACTURING ENGINEERING

Collaborating/Partner Organisation(s)

Peregrine Semiconductor Australia Pty Ltd

Administering Organisation The University of Sydney

Project Summary

Every sapphire wafer for the fabrication of integrated circuits using the silicon-on-sapphire technology is worth more than a thousand dollars, and the cost grows exponentially with successive processing of circuitry. Early detection and prevention of wafer failure is therefore an economic and quality necessity. The fast, non-destructive method to be developed by the proposed research will enable semiconductor electronics manufacturers to achieve a cost-effective fabrication of integrated circuits by detecting damages in wafers at the very early stage of production.