

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

South Australia

The University of Adelaide

LP100100613 Prof Pavel Bedrikovetski, Prof Anthony J Roberts, Dr Andrei G Kotooussov, A/Prof Phillip Pendleton, Mr Keith S Boyle, Mr Jose T Rodrigues

Approved Project Title **Development of innovative technologies for oil production based on the advanced theory of suspension flows in porous media**

2010 \$150,000.00

2011 \$148,000.00

2012 \$150,000.00

Primary FoR 0914 RESOURCES ENGINEERING AND EXTRACTIVE METALLURGY

Partner Organisations

Santos Ltd

Administering Organisation The University of Adelaide

Project Summary

The project will significantly improve the commercial and technological competitiveness of the Australian oil industry and will result into immediate financial benefits for the largest Australian oil company SANTOS. The outcomes will find their application in a number of developing environmental and chemical engineering technologies, which fall into Australian Research Priorities such as clean water production, emission reduction and storage of green house gas, and industrial waste management. The new theory and models to be developed in this project will provide quantitative tools for comprehensive assessment of large-scale geological and industrial projects. The project will also train a high quality research and engineering personnel.

LP100100704 A/Prof Peng Bi, A/Prof Dino L Pisaniello, Prof Alison L Kitson, Prof Jonathan W Newbury, Dr Monika Nitschke, Mr Brenton J Keen

Approved Project Title **Adaptive capabilities in the elderly during extreme heat events in South Australia**

2010 \$80,000.00

2011 \$80,000.00

Primary FoR 0502 ENVIRONMENTAL SCIENCE AND MANAGEMENT

Partner Organisations

SA Department of Health, South Australia State Emergency Service

Administering Organisation The University of Adelaide

Project Summary

This study, using first hand accounts of experiences and perceptions of the extreme heat event of 2009 in South Australia, will provide a valuable insight into the heat adaptive capability of the ageing population, factors affecting susceptibility, and ways to curb the predicted increase in often life-threatening heat exacerbated illnesses, many of which require extended hospital stays. It is envisaged that findings will help inform health policy and contribute to the formulation of a National Heatwave Response plan. Study findings will be disseminated widely at government (state and federal), non-government, and community levels and will help to raise the awareness of heat exacerbated illness in general.

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LP100100215 Dr Jennie Fluin, Dr John Tibby
Approved Project Title **Establishing baseline ecological conditions for the Lower Lakes, South Australia: the applications of palaeoecology to sustainable resource management**

2010 \$75,000.00

2011 \$70,000.00

Primary FoR 0406 PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE

Partner Organisations

SA Department of Environment and Heritage, South Australian Murray Darling Basin Natural Resource Management Board

Administering Organisation The University of Adelaide

Project Summary

The Lower Lakes of the Murray River are in a critical ecological state due to record low water levels. Management of these lakes needs to integrate water security demands with maintaining healthy ecosystem functions. Proposed management options such as allowing seawater incursion and the construction of a weir to impede freshwater flows are based on assumptions about what the Lakes were like naturally (pre-European). This study will reconstruct environmental variability within the Lower Lakes over the past 7000 years, concentrating on salinity to document the extent of marine incursion, and pH to examine the impacts of acid sulphate release from exposed sediments during low flow events.

LP100100668 Prof Robert A Gibson, A/Prof Brian K O'Neill
Approved Project Title **Novel technologies for biodiesel production from meat processing waste streams**

2010 \$208,426.00

2011 \$207,299.00

2012 \$207,272.00

Primary FoR 1003 INDUSTRIAL BIOTECHNOLOGY

Partner Organisations

Dalriada Meat Pty Ltd

Administering Organisation The University of Adelaide

Project Summary

Deriving products from all levels of the agricultural production chain to achieve zero-waste, greatly increases profitability and optimises sustainability. In the meat industry, new opportunities are opening to use by-products such as tallow for the production of novel, cleaner energy-producing biodiesel fuel by way of cutting-edge technologies. Production by these technologies greatly enhances cost benefits, fuel properties and energy security. In this proposal we will partner with a large South Australian regional abattoir and rendering facility to develop these technologies initially at the laboratory scale, and then up-scaling to pilot and full production levels.

LP100100153 A/Prof Bronwyn M Gillanders, Dr Travis S Elsdon
Approved Project Title **Linking fish recruitment and habitat use to ecosystem processes**

2010 \$32,000.00

2011 \$32,000.00

Primary FoR 0602 ECOLOGY

Partner Organisations

Kangaroo Island Natural Resource Management Board

Administering Organisation The University of Adelaide

Project Summary

Estuaries are transition zones between fresh and marine waters and form key nursery areas for fisheries. Understanding what makes an estuary a nursery area, and how dependent fish are on estuaries, is difficult because we lack vital information on fish recruitment and migrations. We will utilise chemical and genetic techniques to determine patterns of recruitment and migration of fish and link these patterns to biological characteristics of fish and physical variables of surrounding landscapes. Outcomes will provide managers with key landscape attributes than require conservation. Such information is vital for continued sustainability of fish and estuarine resources and will benefit rural coastal communities.

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LP100100791 Prof Anton J van den Hengel, Dr Anthony R Dick

Approved Project Title **Image search for simulator content creation**

2010 \$100,000.00

2011 \$100,000.00

2012 \$100,000.00

Primary FoR 0801 ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING

APAI_IT 1

Partner Organisations

Sydac Pty Ltd

Administering Organisation The University of Adelaide

Project Summary

The World Wide Web contains tens of billions of images, with personal and industrial collections stretching to many times that number. The potential economic value of these image-based resources is enormous, but largely untapped as we have no practical way of recovering the images we need. This project will develop image search technologies which will allow Australian industry to exploit these important resources. Some of the wide variety of possible applications might include the searching of surveillance video for objects of interest, vision-based guidance of unmanned vehicles, smart-phone and smart-home systems which understand their environments, and stock tracking systems which can detect spoilage.

LP100100792 Prof Anton J van den Hengel, Dr Anthony R Dick

Approved Project Title **Real-time special effects in live video**

2010 \$61,858.00

2011 \$64,000.00

2012 \$65,000.00

Primary FoR 0801 ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING

Partner Organisations

Holopoint Interactive Pty Ltd, MONKEYSTACK

Administering Organisation The University of Adelaide

Project Summary

Allowing a user to model objects in the real world in real time greatly improves the efficiency of the large-scale modelling process. A user might thus generate a model of a city block by navigating it, construct a 3D model of a factory by traversing it, generate a simulation of an industrial process by carrying it out, or design a new building directly upon the space it will occupy. The augmentation of reality will be a critical component of the future of video cameras, computers and phones. The business opportunities associated with developing technologies in these areas offer significant prospects for Australian ICT industries.

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LP100100212 A/Prof Alfred Yawson, Prof Ralf Zurbruegg, Mr John G Tretola
Approved Project Title **The adequacy and sustainability of self-managed superannuation funds: Governance, performance, asset allocation, fee structure and compliance**

2010 \$30,993.00

2011 \$28,969.00

2012 \$27,940.00

Primary FoR 1503 BUSINESS AND MANAGEMENT

APAI 1

Partner Organisations

SMSF Professionals' Association of Australia Ltd

Administering Organisation The University of Adelaide

Project Summary

This project will provide research to aid decision makers in policy formation and setting on governance, regulatory and performance issues relating to Self-Managed Superannuation Funds (SMSFs), which now make up the largest proportion of superannuation assets, accounting for over 30% of the total \$1.1 trillion of superannuation assets in Australia. Empirically driven advice to the Government and the general community on these issues is of substantial importance given the need for retirees to be self-financing and the current adverse conditions experienced in today's financial environment. Research stemming from this project will highlight the value proposition SMSFs may or may not be providing to the superannuation industry.