

Summary of Linkage Projects Proposals for Funding to Commence in 2009

New South Wales

Macquarie University

LP0990263 Prof AP Avolio; Prof I Sen (Qian); Prof MK Morgan; Prof MA Stoodley; Prof M Umezu

Approved Project Title **Computational haemodynamics system for prediction of risk of rupture of cerebral aneurysms**

2009 : \$ 77,500

2010 : \$ 136,000

2011 : \$ 118,500

2012 : \$ 134,000

2013 : \$ 74,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

GE Healthcare

Dalcross Hospital

Administering Organisation Macquarie University

Project Summary

Every year about 2000 Australians suffer a ruptured aneurysm in the brain and some 750 of these die within 4 weeks. Since there is an increase in the detection of unruptured aneurysms, especially in healthy young people, there is an urgent need to be able to decide which lead to rupture and to provide suitable treatment options. This project, which will provide markedly improved means of patient-specific risk determination for aneurysm rupture, will have significant impact in reducing associated costs on the national health burden due to cerebral hemorrhage and stroke, on community productivity and disability and on more efficient targeting of expensive and dangerous brain surgery.

LP0990568 Dr MJ Bishop; Dr MA Coleman; Dr TM Glasby; Dr BP Kelaher

Approved Project Title **Management of coastal lakes to minimise invasion**

2009 : \$ 20,000

2010 : \$ 42,500

2011 : \$ 42,500

2012 : \$ 20,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Batemans Marine Park

NSW Department of Primary Industries

Southern Rivers Catchment Management Authority

Sapphire Coast Marine Discovery Centre

Administering Organisation Macquarie University

Project Summary

The European shore crab has the potential to undermine the productivity of Australia's estuaries and devastate our shellfish industries, worth over \$50 million p.a. This project will provide estuarine managers with the data urgently needed to prevent spread of this pest species. In doing so, it will help to ensure the future prosperity of our seafood industries and the sustainability of our unique coastal biodiversity. The outcomes of this project will be applicable to the management of many of the > 200 introduced marine species already present within our coastal waters. Importantly, the project will also contribute to research training in new techniques to protect Australia from future pest invasions.

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LP0990223 Dr KA Fryirs; Dr MR Leishman

Approved Project Title **Sediment and seed bank dynamics in river systems of southeastern Australia: Implications for vegetation-based river rehabilitation**

2009 : \$ 45,000

2010 : \$ 85,000

2011 : \$ 80,000

2012 : \$ 40,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Collaborating/Partner Organisation(s)

Hunter - Central Rivers Catchment Management Authority

NSW Department of Water and Energy

Administering Organisation Macquarie University

Project Summary

Every year in Australia millions of dollars are spent revegetating degraded riparian corridors as part of best practice river rehabilitation. The planting and maintenance of riparian tubestock is an expensive but essential component of current on-the-ground river management across the country. What if the success rate of riparian rehabilitation could be enhanced by combining geomorphic and ecological knowledge to maximise the germination of native seeds stored in riparian seed banks? As the conservation of biodiversity becomes integral to environmental management, understanding riparian seed bank dynamics and seedling establishment within a geomorphic framework is an essential tool in river rehabilitation practice.

LP0990500 Prof SP Turner; Dr BF Schaefer; Mr G McConachy

Approved Project Title **A novel approach for economic uranium deposit exploration and environmental studies**

2009 : \$ 57,500

2010 : \$ 122,500

2011 : \$ 118,500

2012 : \$ 118,500

2013 : \$ 65,000

Primary RFCD 2603 GEOCHEMISTRY

Collaborating/Partner Organisation(s)

Quasar Resources

Administering Organisation Macquarie University

Project Summary

Outcomes of this project will be: (i) the discovery of new economic uranium ore deposits; (ii) development of a new exploration technology allowing for improved ore deposit targeting. Information gained on the behaviour of radioactive elements at the Earth's surface will be critical for the study of safety issues related to radioactive waste storage and obtaining reliable time constraints on the evolution of the Australian landscape.