

Summary of Linkage Infrastructure, Equipment and Facilities Proposals

Queensland

The University of Queensland

LE0989090 Prof RA Fotheringham; Prof DJ Carter; Prof JA Hay; Prof JE Tompkins; Dr L Dale; Mr KG Webster; Ms KM Kilner; Dr J Huggins; Prof PR Eggert; Prof BH Bennett; Dr EN McMahon; Prof RW Dixon; Prof EA Webby; Mr P Minter; Mr RH Coleman; Mr JF Arnold; Prof KM Mallan; Prof AJ Patterson; Ms CD Young; Prof W Ommundsen; Dr E Blackmore; A/Prof CM Taylor; Asst Prof RA Phiddian; A/Prof TA Bunda; Prof CM Bradford; Ms AH Horn; Prof DJ Haskell; Ms DM Bird; Dr TN Burrows

Approved Project Title **AustLit Phase Three: Transforming the Study of Australian Literature through a Collaborative eResearch Environment**

2009 : \$ 650,000

Primary RFCD 4202 LITERATURE STUDIES

Partner Organisations & Collaborating Organisations

The University of Queensland
The University of New South Wales
University of Wollongong
Queensland University of Technology
James Cook University
The University of Sydney
Deakin University
Monash University
The Flinders University of South Australia
The University of Western Australia
Administering Organisation The University of Queensland

Project Summary

AustLit's information and research services reach into virtually all avenues of Australian society. From the high level professor of English or Australian Studies to the student accessing the internet at an Indigenous knowledge centre in outback Queensland or the NT, AustLit provides both basic and complex information and research support to every enquirer. The proposed expansion in 2009 will enhance its value to many Australian communities by providing advanced capacities for research and greater levels of high quality information and full text content. Its multi-dimensional approach to the services it delivers ensures that it will continue to build value to the whole community over time.

LE0989436 Prof IH Frazer; Prof CC Nelson; Dr RJ Steptoe; A/Prof GR Monteith; Prof MA Brown; Dr NA McMillan; Prof R Thomas; A/Prof NA Saunders; Prof AC Herington; Dr JD Hooper

Approved Project Title **Multiphoton microscopy of living animals as a tool for immunology and cell biology studies**

2009 : \$ 400,000

Primary RFCD 3202 IMMUNOLOGY

Partner Organisations & Collaborating Organisations

The University of Queensland
Queensland University of Technology
Princess Alexandra Hospital
Administering Organisation The University of Queensland

Project Summary

The multiphoton microscope will enable us to watch the growth, migration and interactions of cells in a living animal in response to changes in the cells' environment will give us better understanding of how we work as living machines, and what can go wrong with that process to make us unwell.

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LE0989608 Prof O Hoegh-Guldberg; Dr DI Kline; Dr KR Anthony; Dr SG Dove; Prof MT McCulloch; Dr BN Opdyke; Dr JM Lough; Dr PG Brewer; Mr WJ Kirkwood
Approved Project Title **The Heron Island Climate Change Observatory: An In-Situ Ocean Acidification and Carbonate Chemistry Monitoring Platform**
2009 : \$ 190,000
Primary RFCD 2707 ECOLOGY AND EVOLUTION

Partner Organisations & Collaborating Organisations

The University of Queensland
The Australian National University
Monterey Bay Aquarium Research Institute
Australian Institute of Marine Science (AIMS)

Administering Organisation The University of Queensland

Project Summary

Climate change and ocean acidification are widely recognized as key threats to Australia's natural ecosystems, yet we are currently ill-equipped to respond due to poor knowledge of the scale/nature of the impacts. The Heron Island Climate Change Observatory will establish key infrastructure that will rapidly improve our understanding of the impacts of ocean acidification which is important to local communities and the nation given that coral reefs support over \$6 billion in revenue (and employ 60,000 people) each year. This critically important information is essential to the management and protection of Australia's coral reefs, including the Great Barrier Reef.

LE0989675 Prof AV Nguyen; Prof DD Do; Dr GR Birkett; Prof V Rudolph; Prof GM Lu; Prof SK Bhatia; A/Prof JC Diniz da Costa; Prof GM Evans; Prof GJ Jameson; Dr CM Phan; Prof R De Marco; Prof MO Tade; A/Prof HM Ang; A/Prof P Pendleton; Prof Y He
Approved Project Title **Interface-specific facility for quantifying adsorption and structures at particulate interfaces**
2009 : \$ 180,000
Primary RFCD 2906 CHEMICAL ENGINEERING

Partner Organisations & Collaborating Organisations

The University of Queensland
Curtin University of Technology
James Cook University
The University of Newcastle
University of South Australia

Administering Organisation The University of Queensland

Project Summary

The facility will be used by the collaborating universities to investigate adsorption and interface properties with great precision, and to develop new and improved technologies for coal and mineral processing, saline water utilisation, water desalination, energy production and environment protection. In particular, the project will investigate innovative ways of using ion-interface interactions in saline water for cleaning coal and recovering value minerals by flotation, and for improving dissolved air flotation used in water treatment and desalination to produce drinking water. The project will further investigate novel ways of capturing CO₂, storing natural gases and hydrogen, and tailoring nutrient nano-crystals for foliar delivery.

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LE0989334 Prof MA Ragan; Dr SM Grimmond; Dr GE Muscat; Dr RD Teasdale; Mr JR Barker; Dr AJ Gorse; Dr CA Wells; Dr MH Little

Approved Project Title **An integrated high-performance computational platform powering systems biology investigation**

2009 : \$ 400,000

Primary RFCD 2799 OTHER BIOLOGICAL SCIENCES

Partner Organisations & Collaborating Organisations

The University of Queensland

Griffith University

Australian Stem Cell Centre

Administering Organisation The University of Queensland

Project Summary

Systems biology is the study of the organism as a whole and provides a deeper understanding of biological processes than is possible by studying components separately. Recognised as essential for biological research, we propose to establish an advanced computational platform to study these processes at a systems level. Its hardware and specialised software will allow Australian researchers to examine complex pathways involved in animal and human health and disease, as well as in biotechnology and environmental processes. It will provide unique capabilities not currently available in Australia, and help Australian researchers remain internationally competitive in breakthrough science and frontier technologies.

LE0989067 A/Prof J Zhao; A/Prof JD Woodhead; Prof AR Chivas; Prof JR Dodson; Prof M Archer; Dr RN Drysdale; Dr GE Webb; Dr AM Scheffers; Dr GJ Prideaux; Prof J Drennan; Prof JM Pandolfi; Prof O Hoegh-Guldberg; A/Prof PM Vasconcelos; A/Prof SD Golding; Dr M Gasparon; Dr G Rosenbaum; A/Prof D Neil; Dr HA McGowan; Dr PT Moss; A/Prof MI Weisler; Dr K Yu; Dr GJ Price; Dr Y Feng; Dr SG Dove; Dr JC Hellstrom; Dr R Maas; A/Prof JM Hergt; Prof AJ Gleadow; Prof MA Sandiford; A/Prof BP Kohn; Dr ML Cupper; Prof RG Roberts; Prof CD Woodroffe; Prof CV Murray-Wallace; Prof MJ Morwood; Prof GC Nanson; Dr Z Jacobs; Dr PF Carr; Dr HV McGregor; Dr LJ Arnold; Dr D Fink; Dr TM Esat; Dr Q Hua; Dr S Hand; Dr IT Graham; Dr DR Cohen; Dr DK Curnoe; Dr AI Herries; Dr CR Sloss; Prof WE Boyd; Dr SR Scheffers; Dr KH Taffs; Dr JF Parr

Approved Project Title **The future of palaeoclimate and archaeological research in Australia: next generation instrumentation for chronology and environmental reconstruction**

2009 : \$ 950,000

Primary RFCD 2603 GEOCHEMISTRY

Partner Organisations & Collaborating Organisations

The University of Queensland

The University of Melbourne

University of Wollongong

Australian Nuclear Science & Technology Organisation (ANSTO)

The University of Newcastle

Queensland University of Technology

Southern Cross University

The Flinders University of South Australia

The University of New South Wales

Administering Organisation The University of Queensland

Project Summary

The outcomes of this project will promote a better understanding of Australia's arid continent and its surrounding marine environment, contribute to studies of global climate change, and provide new insights into the response of fragile ecosystems to such events and processes. The project addresses directly the National Research Priority 'Water - a critical resource', 'Responding to climate change and variability', 'Overcoming soil loss, salinity and acidity', 'Sustainable use of Australia's biodiversity' and 'Understanding our region and the world'. It provides a consortium-type platform for highly productive collaborative research and training across eight universities and one research organisation in Australia.