

Summary of Linkage Infrastructure Applications for Funding to Commence in 2006

Victoria

The University of Melbourne

LE0668266 Prof JB Furness; Dr JA Donald; Dr IM Coupar; A/Prof TJ Lithgow; Dr GR Hime; Dr HM Young; Dr CR Anderson; Dr HR Irving; A/Prof PM Whittington; Dr EL Fletcher

Approved Project Title **High Resolution Cellular and Molecular Imaging System**

2006 : \$264,000

Primary RFCD 3207 NEUROSCIENCES

Partner Organisation(s)

The University of Melbourne

Deakin University

Monash University

Administering Institution The University of Melbourne

Project Summary

Understanding where molecules are within cells, and how they interact with each other, is fundamental to significant advances being made in biology. Our research will use advanced imaging techniques to localize proteins within a variety of cells including neurons and germ cells. We will be able to determine how the different molecules within a single cell interact with each other. This information is relevant to many biological mechanisms and to many human diseases. Furthermore, our research will help maintain Australia's strong international reputation in the fields of neuroscience, protein trafficking and stem cells.

LE0667981 Prof MB Renfree; Prof JA Graves; Dr SM Forrest

Approved Project Title **Kangaroo Genome Resource Management Facility**

2006 : \$200,000

Primary RFCD 2702 GENETICS

Partner Organisation(s)

The University of Melbourne

The Australian National University

Australian Genome Research Facility

Administering Institution The University of Melbourne

Project Summary

Increasingly, large Australian multicentre research programs in biological and medical sciences have a genomics component that involves integration of biological information with sequencing data. The success of these research programs depends on rapid internet access to the research information by all participating scientists. The universal design of the proposed information management system means that it can be easily adapted to support a broad range of research programs. The development of this software program therefore has the potential to benefit research scientists, academics and students in many related fields, as well as the broader community, through enhancing research outcomes.

LE0668017 A/Prof F Separovic; A/Prof M Aguilar; Prof L Tilley; Prof JS Van Deventer; Dr GC Lukey; A/Prof PR Gooley; A/Prof GJ Bryant; Dr A Clayton; Dr S Rochfort

Approved Project Title **Membrane Protein Structure and Interaction Facility**

2006 : \$1047,000

Primary RFCD 2499 OTHER PHYSICAL SCIENCES

Partner Organisation(s)

The University of Melbourne

Monash University

La Trobe University

Administering Institution The University of Melbourne

Project Summary

While it is estimated that a third of the human genome encodes for membrane proteins, the structures of only relatively few membrane proteins are currently known. It will be some time before membrane protein structure determination becomes routine, yet over 50% of the drugs on the market today rely on the activity of membrane proteins for their efficacy. This application seeks to establish a Membrane Protein Structure and Interaction Facility for the development and application of novel techniques and approaches to study the structure and interactions of membrane proteins. Research progress will be greatly enhanced by the establishment of this dedicated facility with cutting-edge technologies for the study of membrane proteins.

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LE0668428 Prof GN Taylor; Dr E Barberio; A/Prof ME Seviar; Dr SN Tovey; Dr KE Varvell; A/Prof LS Peak; Prof AB Rozenfeld

Approved Project Title **Support for the Australian Experimental High Energy Physics Program**

2006 : \$295,000

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

Partner Organisation(s)

The University of Melbourne

The University of Sydney

University of Wollongong

Administering Institution The University of Melbourne

Project Summary

Working at the cutting edge of international research, using facilities and collaborating with scientists of the highest calibre from the world over, provides an outstanding capability for Australian science that cannot be met with local facilities alone. High energy physics is the premier example of successful international collaboration. Search and discovery in fundamental physics is the best training ground for our future scientists. Technology transfer to local companies and training of scientific and technical staff are important outcomes of this project. The Australian public is fascinated by results and discussion about the origins of the Universe, at the centre of this project.

LE0668226 Dr JD Woodhead; A/Prof JM Hergt; Dr MW Wallace; Prof IA Nicholls; Prof RA Cas; Dr IS Buick

Approved Project Title **A new X-ray spectrometer facility for VIEPS: major and trace element characterisation of geological materials**

2006 : \$186,000

Primary RFCD 2603 GEOCHEMISTRY

Partner Organisation(s)

The University of Melbourne

Monash University

Administering Institution The University of Melbourne

Project Summary

Australia has a well-earned reputation as a leading innovator in analytical geochemistry and the acquisition of this instrumentation will reinforce that standing. The equipment will support a broad range of research activities and enhance our capability for research training at Honours and post-graduate student level. In addition this project addresses directly our current National Research Priority 'an environmentally sustainable Australia', and priority goals 'Developing deep earth resources' and 'Responding to climate change and variability'