

# Summary of Linkage Projects Proposals for Funding to Commence in 2008

## New South Wales

### University of Wollongong

**LP0882009** Prof NE Dixon; Dr S Billingham

**Approved Project Title** **New Techniques for Structural Biology and Directed Molecular Evolution**

**2008 :** \$ 25,627

**2009 :** \$ 25,627

**2010 :** \$ 25,627

**Primary RFCD** 2708 BIOTECHNOLOGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Bioline Australia Pty Ltd

**Administering Organisation** University of Wollongong

**Project Summary**

This PhD program will equip an Australian graduate with advanced training in techniques in molecular genetics and protein chemistry that are currently in high demand by the biotechnology industry, and also provide him/her with direct experience of an industrial R&D laboratory environment. Moreover, it will establish a basis for further collaboration between a leading University-based research laboratory and an established R&D company that will lead to development of new techniques for use in biotechnology in Australia and overseas.

**LP0882832** Dr AV Pan; Prof SX Dou; Dr O Mukhanov

**Approved Project Title** **Development of superconducting leads with ultra-low thermal conductivity for cryoelectronic applications**

**2008 :** \$ 151,000

**2009 :** \$ 141,000

**2010 :** \$ 146,000

**Primary RFCD** 2914 MATERIALS ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

HYPRES Inc.

Microwave & Materials Designs Pty Ltd

**Administering Organisation** University of Wollongong

**Project Summary**

Superconducting systems are revolutionary technologies that have the potential to make a significant impact on society. The development of the new technology of superconducting wiring, which would effectively eliminate heat generation and its transfer to the cryogenic electronics, and its subsequent employment will enable superconductive electronics to become price competitive, significantly outperforming conventional systems. The establishment of this new frontier technology of heat-switch current leads will benefit Australian industries and have a dramatic impact in the future on the field of cryogenic quantum electronics (such as quantum computing), which is currently under profound exploration in Australia.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0882430** Dr P Yu; A/Prof R Jayasuriya

**Approved Project Title** **Introducing computer-based documentation to Residential Aged Care: a multi-method evaluation of success**

**2008 :** \$ 105,627

**2009 :** \$ 100,627

**2010 :** \$ 95,627

**Primary RFCD** 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Warrigal Care

RSL Care

UnitingCare Ageing South Eastern Region

Illawarra Retirement Trust

Aged and Community Services Australia

**Administering Organisation** University of Wollongong

**Project Summary**

Improvements to quality and use of evidence-based methods in residential aged-care are restricted due to the very slow adoption of electronic information systems. This research will provide key investors, government, aged care providers and IT vendors, with tools to measure success in introducing IT into this sector. The project will create a platform with the national peak body, to disseminate lessons in successful implementation of computerised systems in residential aged-care, based on studies in two states. The studies will also benefit the international community researching technology adoption, by extending its boundary condition to a novel setting.

**LP0882282** Prof C Zhang; A/Prof X Wang; Dr G Wang; Prof T Toyoda

**Approved Project Title** **Novel methods for enhancing room temperature figure of merit of thermoelectric/thermionic materials for refrigeration applications**

**2008 :** \$ 81,000

**2009 :** \$ 79,000

**2010 :** \$ 87,000

**Primary RFCD** 2918 INTERDISCIPLINARY ENGINEERING

**Collaborating/Partner Organisation(s)**

Hydrokinetics Pty Ltd

**Administering Organisation** University of Wollongong

**Project Summary**

With global warming and an increased awareness of climate change, devices such as thermoelectric modules can be part of the solution, particularly if their relative power and efficiency can be increased. The aim of this project is to bring together theoreticians, experimentalists, materials scientists, and industrial partners with complementary expertise to develop new techniques and methods for fabricating novel thermoelectric/thermionic materials with high figure of merit, ZT, for solid state refrigeration applications. The success of the project will lead to a 3 to 5 fold increase in the market share of thermoelectric cooler and will have a significant impact on the Australian economy and reduce greenhouse emissions and global warming.

## Summary of Linkage Projects Proposals for Funding to Commence in 2008

**LP0882947** A/Prof SP Zhu; Dr JM Goard; Mr TJ Berry

**Approved Project Title** **Developing a robust model for pricing inter-related volatility-based financial derivative contracts.**

**2008 :** \$ 35,000  
**2009 :** \$ 35,000  
**2010 :** \$ 35,000

**Primary RFCD** 3503 BANKING, FINANCE AND INVESTMENT

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**  
Tibra Capital

**Administering Organisation** University of Wollongong

### Project Summary

Volatility-based financial contracts were developed in the late 1990s to provide an easy way for investors to gain exposure to the future level of volatility and thus provide a means by which they could speculate on its future levels and also hedge unpredictable volatility risk. This would potentially save them from losing vast quantities of money. However these products can only be efficient products for trading and risk management if they are priced correctly. This project will benefit investors by providing empirically viable models that will be able to be easily implemented to provide accurate and fast pricing solutions.