

Victoria

La Trobe University

DP0878622 Prof AY Aikhenvald; Prof RM Dixon

Approved Project Title **The world through the prism of language: a cross-linguistic view of genders, noun classes, and classifiers**

2008 : \$ 135,000

2009 : \$ 120,000

2010 : \$ 130,000

2011 : \$ 120,000

Primary RFCD 4201 LANGUAGE STUDIES

Administering Organisation La Trobe University

Project Summary

Australia is one of the most multilingual and multicultural countries in the world, with several hundred indigenous and immigrant languages. Noun classification devices - ranging from gender systems in familiar Indo-European languages to numeral classifiers in Southeast Asian languages - offer a unique insight into people's categorisation of the world around them. In-depth knowledge of how speakers of different languages classify objects around them will promote intercultural understanding within Australia and world-wide, allowing us to overcome potential miscommunications due to different language backgrounds, and advancing our understanding of the region and the world (within the National Priority 'Safeguarding Australia').

DP0881732 Prof MA Anderson; Dr KM Plummer

Approved Project Title **Molecular basis of the antimicrobial activity of the floral defensin, NaD1, for the plant pathogen *Fusarium oxysporum*.**

2008 : \$ 105,000

2009 : \$ 105,000

2010 : \$ 105,000

Primary RFCD 2701 BIOCHEMISTRY AND CELL BIOLOGY

Administering Organisation La Trobe University

Project Summary

Filamentous fungi are responsible for many major plant diseases that result in devastating crop losses and food spoilage world wide. Currently there are no resistant cultivars or adequate chemical controls for many of these diseases. The plant defensin, NaD1, stops the growth of many pathogens, including the recalcitrant fungi *Fusarium oxysporum* and *Botrytis cinerea*, and has been shown to protect transgenic cotton against fungal infection in glasshouse and field trials. NaD1 has potential application for durable, broad spectrum fungal disease control in crops. This will lead to both environmental and economic benefits to Australia.

DP0881381 Dr S Basov; Dr MI Bhatti

Approved Project Title **Mechanism design under bounded rationality: The optimal contracts in the complex world**

2008 : \$ 25,000

2009 : \$ 28,000

2010 : \$ 30,000

Primary RFCD 3401 ECONOMIC THEORY

Administering Organisation La Trobe University

Project Summary

The research will help to clarify the nature of optimal contracts in real life environments. An important feature of such environments is that they are complex so that actors cannot be assumed to behave fully rationally. We propose to address the question of optimal contract design under bounded rationality. Determining the incidence of costs of boundedly rational behaviour may provide foundations for some policy proposals in areas as diverse as industrial relations and income taxation in Australian settings.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0879071 Mr J Byrnes; Dr LR Crase

Approved Project Title **Solving the water crisis in Australian cities and towns with options contracts between urban and rural water users**

2008 : \$ 86,067

2009 : \$ 83,043

2010 : \$ 89,973

Primary RFCD 3402 APPLIED ECONOMICS

APD Mr J Byrnes

Administering Organisation La Trobe University

Project Summary

We will equip water resource managers with a powerful and effective tool for the allocation of water resources between rural and urban sectors. The importance of this bridge cannot be understated. To date urban centres have endured stringent water restrictions to manage dwindling urban supplies, while ignoring the potential benefits of purchasing water from the irrigated agriculture sector. Furthermore, rural communities have suffered hardship due to restricted agricultural production during times of drought. This research proposal represents an exciting solution to both problems and offers the tantalising prospect of water shortages in our capital cities and towns becoming distant memories.

DP0879990 Prof JJ Fitzgerald

Approved Project Title **The transnational history of the Chinese Nationalist Party**

2008 : \$ 101,000

2009 : \$ 105,000

2010 : \$ 105,000

Primary RFCD 4301 HISTORICAL STUDIES

Administering Organisation La Trobe University

Project Summary

First the project contributes to better understanding of Australia's region, secondly it enhances understanding of the place of international Chinese communities in world politics, trade, and migration, thirdly it contributes to Australian understanding of the ties linking the Chinese diaspora in Australia to other Chinese communities around the world and in China, fourth it contributes to important international debates on migration and ethnic politics over the course of the 20th century, and fifth it confirms Australia's international standing as a site of innovation and excellence in research on the Asian and Pacific regions.

DP0879074 Dr D Frankel; Dr JM Webb

Approved Project Title **Diversity, interaction and change in prehistory: the third millennium BCE in Cyprus**

2008 : \$ 152,000

2009 : \$ 130,000

2010 : \$ 130,000

2011 : \$ 70,000

Primary RFCD 4302 ARCHAEOLOGY AND PREHISTORY

Administering Organisation La Trobe University

Project Summary

This project will enhance the high reputation Australians have developed over many years in Mediterranean archaeology, maintaining and broadening Australia's cultural and economic relationships with Cyprus. It will be relevant to both scholars and the general public in Cyprus and the large Cypriot community in Australia. It will involve the training of students from both Australian and Cypriot universities in all aspects of archaeological fieldwork, laboratory analysis and research.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0879571 Dr R Kenny

Approved Project Title **Psychoanalysis, Anthropology and the Australian Aborigine: the revaluing of myth in the twentieth-century**

2008 : \$ 78,648
2009 : \$ 98,175
2010 : \$ 78,648

Primary RFCD 3706 HISTORY AND PHILOSOPHY OF SCIENCE AND MEDICINE

APD Dr R Kenny

Administering Organisation La Trobe University

Project Summary

This project will uncover the role Western experience of Aboriginal Australian cultures has played in the revaluing of myths in the twentieth century particularly via the influence of psychoanalysis. It will show that European experience of Aboriginal Australia raised questions, and the attempted answers to those questions changed European thinking. Revealing this will add significantly to Australia's self understanding. It will add significantly to the understanding of the importance myth has gained over the last century. It will be an important Australian contribution to international scholarship of the histories of Anthropology, Science, and Psychoanalysis, and to Religious and Indigenous Studies

DP0879638 Dr J Libich; Dr A Hughes Hallett; Dr P Stehlik

Approved Project Title **Monetary-fiscal policy interactions and their effect on economic performance: new theory, empirics, and an application to Australia**

2008 : \$ 45,000
2009 : \$ 47,000
2010 : \$ 42,000

Primary RFCD 3402 APPLIED ECONOMICS

Administering Organisation La Trobe University

Project Summary

Both fiscal and monetary policy are powerful tools that affect the wellbeing of individuals. Even if current policies are 'responsible', the social cost of uncertainty about the future is extremely high - to which the 2004 'high interest rates under Labour' election campaign or current heated fiscal debates in the US and EU testify. Our analysis will contribute to the reduction of the social cost by identifying the institutional setting that is robust to 'bad' policymakers, i.e. one in which socially optimal policies are 'institutionalized' (legislated) rather than resting with individuals. Such arrangements are further likely to stimulate investment and economic growth.

DP0877285 Dr A Modesti

Approved Project Title **Mapping Matrons: Women's Cultural Patronage Networks in Seventeenth Century Northern Italy: from Maria Cristina of Savoy to Vittoria della Rovere.**

2008 : \$ 98,277
2009 : \$ 81,647
2010 : \$ 78,648

Primary RFCD 4301 HISTORICAL STUDIES

APD Dr A Modesti

Administering Organisation La Trobe University

Project Summary

This project adds an important historical dimension to contemporary debates concerning social capital and female leadership. It retrieves women's significant public engagement and community building in the realm of public taste. Historical precedents show how female networks and agency contribute to the community and public sector. Women's networks of taste shaped human creativity then...and now. This study will illuminate how our culture (and democracy) emerged in gendered networks of cultural exchange. The project also contributes to Australia's international reputation for high-quality scholarship on early modern Europe, and adds another dimension to cultural and gender studies in this country.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0879827 Dr Cl Pakes; Prof JD Riley; Prof PJ Moriarty; Dr CJ Mellor; Dr S Rogge; Prof Dr L Ley

Approved Project Title **Quantum transport in carbon-based materials**

2008 : \$ 125,000

2009 : \$ 124,000

2010 : \$ 119,000

Primary RFCD 2402 THEORETICAL AND CONDENSED MATTER PHYSICS

Administering Organisation La Trobe University

Project Summary

Carbon-based molecular materials will play an important role to frontier nanoelectronics industries. Building on our existing expertise and infrastructure for nanoscience, and employing new facilities at the Australian synchrotron, we aim to develop a unique approach to molecular-scale quantum device engineering utilising pure-carbon materials. New protocols for materials control of electronic structure at the molecular level will be developed to demonstrate carbon as a quantum material, a high profile objective that will place Australia at the forefront of a new area of surface and device science.

DP0879775 Prof DR Phillips; Dr R Anderson; Prof TH Koch

Approved Project Title **Tumour localisation and enhancement of anthracycline anticancer activity**

2008 : \$ 85,000

2009 : \$ 85,000

2010 : \$ 85,000

Primary RFCD 3203 MEDICAL BIOCHEMISTRY AND CLINICAL CHEMISTRY

Administering Organisation La Trobe University

Project Summary

The anthracyclines are one of the most widely used anticancer agents today. If the cytotoxicity of these agents can be localised to tumour cells, or their activity improved, then this will result in improved response rates, less side-effects and an improved quality of life for many patients for whom anthracycline treatment is an important part of their therapy. This will result in enormous national/community benefit to an aging Australian population that is becoming increasingly more prone to cancer.

DP0878002 Prof MK Pitts; A/Prof KA Petersen; Prof H Baker

Approved Project Title **The ART of making babies: How human embryo research and assisted reproduction are regulated in Australia and New Zealand**

2008 : \$ 31,000

2009 : \$ 42,000

2010 : \$ 40,000

Primary RFCD 3701 SOCIOLOGY

Administering Organisation La Trobe University

Project Summary

Scientific breakthroughs in the past 25 years have made it possible for people to receive assistance to conceive when they would otherwise remain childless. Access to assisted reproductive technologies is governed by different regulatory frameworks in the states and territories of Australia. We will clarify how clinical practice, service delivery and medical research are influenced by the differing regulatory frameworks. The research will be of national significance to policy makers and legislators and to potential beneficiaries of infertility services and will assist communities to understand how and why these important areas of human concern are regulated.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0878459 Prof R Quispel; Dr WM Wright; Prof RI McLachlan; Prof A Iserles; Prof H Munthe-Kaas; Dr M Sofroniou; Prof B Owren; Prof Dr M Hochbruck

Approved Project Title **Geometric numerical integration of differential equations**

2008 : \$ 180,000
2009 : \$ 170,000
2010 : \$ 185,000
2011 : \$ 185,000
2012 : \$ 105,000

Primary RFCD 2301 MATHEMATICS

APF Prof R Quispel

Administering Organisation La Trobe University

Project Summary

Differential equations (DEs) play a central role in modelling scientific phenomena in physics, biology, chemistry, astronomy, meteorology, and geoscience. We have developed new ways of solving DEs, using geometric integration, which have significant advantages over traditional methods because of the crucial nonlinear stability they provide.

This project, combining 7 world experts from 6 countries and 1 early career researcher, will place Australia at the forefront of this intensive international activity.

It will significantly strengthen Australia's links with the mathematical software industry (e.g. Wolfram Research, Inc), and will lead to world class graduates and research training.

DP0879821 Dr JA Reynolds; Dr JK Chase; Prof J Williams; A/Prof ED Mares

Approved Project Title **Analytic and Continental: Arguments on the Methods and Value of Philosophy**

2008 : \$ 86,698
2009 : \$ 86,698
2010 : \$ 39,972

Primary RFCD 4401 PHILOSOPHY

Administering Organisation La Trobe University

Project Summary

This project is of great significance to the international academic philosophical community, as there has been no sustained and coordinated treatment of the methodological differences between analytic and continental philosophers anywhere in the world. While both analytic and continental philosophers of Australia have a strong reputation that this project will further, by bringing international philosophers of both traditions to Australia, and staging at least two pluralist conferences on their respective methodologies, this research will assist in breaking down the oppositional thinking that subtly pervades the Australian philosophical community, and, in different ways, the humanities and social sciences at large.

DP0877882 A/Prof C Tang; Dr JA Baldock

Approved Project Title **Role of organic matter in soil pH change in agro-ecosystems**

2008 : \$ 100,000
2009 : \$ 100,000
2010 : \$ 100,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

Administering Organisation La Trobe University

Project Summary

Over 50 million hectares of arable lands in Australia are affected by soil acidity. Acidity-affected lands continue to expand due to the ongoing process of acidification under current farming practices. The project will provide new knowledge essential for the improved use and management of organic matter to minimize or reverse soil acidification and increase carbon sequestration in farming systems. The associated reduction of soil acidification will also minimise the negative impact of nutrient and water losses on the environment. Growers will benefit from the project through improved soil fertility and crop production, and sustainable land use.