

New South Wales

University of Technology, Sydney

DP0880529 Prof SJ Donald; Prof H Evans

Approved Project Title **Posters of the Cultural Revolution: Contemporary Chinese perspectives on an era of propaganda**

2008 : \$ 116,633

2009 : \$ 116,089

2010 : \$ 83,538

Primary RFCD 4203 CULTURAL STUDIES

Administering Organisation University of Technology, Sydney

Project Summary

China's recent history is of less interest to public commentators than its current extraordinary era of reform and expansion. This project is based on the assumption that the images and memories of the immediate past are clues to the meaning and communication patterns of the present. Accessible works of cultural history, such as is proposed here, will give the broad Australian public, including citizens of Chinese origin, as well as the extensive scholarly community, access to a nuanced and emotional view of our largest trading partner, and its attitude to communication, visual culture and the past.

DP0877722 Prof D Eamus; Prof MA Adams; Dr M Zeppel

Approved Project Title **Spatially integrated estimates of landscape water fluxes at several contrasting sites.**

2008 : \$ 97,000

2009 : \$ 84,000

2010 : \$ 60,000

Primary RFCD 2704 BOTANY

Administering Organisation University of Technology, Sydney

Project Summary

Woodlands transpire large amounts (> 80 % of rainfall) of water into the atmosphere and this water is lost from the catchment. Australia experiences large annual and seasonal variations in rainfall. Water and catchment managers need to estimate how much water is transpired, especially as climate and land-use practices change, as this determines how much water is available for drinking, use in mining, forestry, irrigation, and for ecosystem health purposes. This project is the first to combine the use of scintillometry to compare spatially averaged rates of water use with development of a model to predict landscape water use. By using 4 contrasting ecosystems we shall provide a deep understanding of the controls of vegetation water use.

DP0877459 Dr D Ghosh; Prof H Goodall; Prof S Muecke; Em/Prof MN Pearson

Approved Project Title **Intercolonial networks of the Indian Ocean**

2008 : \$ 56,288

2009 : \$ 104,950

2010 : \$ 108,623

Primary RFCD 4203 CULTURAL STUDIES

Administering Organisation University of Technology, Sydney

Project Summary

This project falls within National Research Priority 4, Safeguarding Australia, specifically the priority goal Understanding our Region and the World. It will enhance Australia's capacity to interpret and engage with its local and global environment and shed new light on regional security issues through an innovative re-appraisal of its history and role both locally and internationally. It will document, highlight and potentially reactivate long-established but neglected trade linkages with India, an emerging economic giant, as well as other Indian Ocean countries. Consequent research collaborations and outcomes will strengthen intellectual relationships between Australia and the region, particularly India.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0877918 Prof DS Goodman; Dr Y Lu

Approved Project Title **Colonial Cosmopolitanism and Chinese Modernity: German Economic and Cultural Adventurers in China 1870-1937**

2008 : \$ 53,118

2009 : \$ 52,418

2010 : \$ 53,604

Primary RFCD 4301 HISTORICAL STUDIES

Administering Organisation University of Technology, Sydney

Project Summary

The project will assist in increasing Australia's knowledge base about both colonialism in general and social change in China; and will add to Australia's international reputation as a major centre of research on China. It will increase understandings of the important histories of China's interactions with the outside world, lessons that will spill over into Australia's history, current and future interactions with China. In the process the project challenges the myth of an isolated, xenophobic 'China as Middle Kingdom' by exploring histories of China's productive interactions with major economic powers, such as Germany.

DP0880853 Dr J Goodman; A/Prof D Zowghi; Dr JP Marshall

Approved Project Title **Chaos, Information Technology, Global Administration and Daily Life**

2008 : \$ 133,981

2009 : \$ 117,916

2010 : \$ 127,306

2011 : \$ 125,306

2012 : \$ 117,916

Primary RFCD 3703 ANTHROPOLOGY

QEII Dr JP Marshall

Administering Organisation University of Technology, Sydney

Project Summary

The project draws attention to unforeseen effects arising from IT, and suggests ways of incorporating these effects into the system, rather than ignoring them or applying more of the same disordering order. Disorder cannot always be cured by better or stricter management, as disorder is intertwined together with modes of ordering and their interaction with natural or social orders.

The project gives a framework to help organisations implement IT systems to allow people to participate productively in government, administration or the workplace without resenting computer systems or feeling ignored or sidetracked. Changing the ways we look at order and chaos will help Australian leaders deal with a chaotically appearing world situation.

DP0879002 Prof RA Iedema; A/Prof E Manias; Dr BB Lee; A/Prof MD Buist; A/Prof GA Caplan; Dr M Kornberger; Ms JF Carthey; Dr R Sorensen; Dr CM Jorm; Prof FD Becker

Approved Project Title **Examining organisational complexity and clinical risk to improve hospital patients' safety.**

2008 : \$ 163,000

2009 : \$ 150,000

2010 : \$ 162,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

Administering Organisation University of Technology, Sydney

Project Summary

Improving communicative practices will reduce the massive rate and cost of medication errors and hospital-acquired infections. Current costs of hospital-caused incidents are around AU\$2 billion per year. These costs are likely to rise further because hospitals are becoming busier, more culturally and linguistically diverse, less generously resourced per patient, and more technologically capable of keeping sicker patients alive for longer, leading to increased clinical risk and more incidents. This project could save around 20% of the total cost of hospital operations by reducing lengths of stay, lowering re-admission rates and ensuring better deployment of clinical resources.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0880074 Prof JJ Louviere; Dr CM Rungie; A/Prof LV Coote
Approved Project Title **Latent variable modelling of discrete choice experiments**
2008 : \$ 43,262
2009 : \$ 89,568
2010 : \$ 117,950
Primary RFCD 3502 BUSINESS AND MANAGEMENT
Administering Organisation University of Technology, Sydney

Project Summary

Discrete choice experiments and models are used to forecast consumer responses to changes in products policies and programs worldwide. Recent research suggests key model assumptions are violated because error variances covary with observed and unobserved factors. In order to address this, we will model systematic relationships between error variances and observed (eg, prices, survey length) and unobserved (eg, 'convenience', 'reputation') factors to improve model reliability and accuracy. This should lead to more accurate models/forecasts, benefitting business and government, which addresses the national priority of 'frontier technologies, promoting an innovative culture and economy'.

DP0880739 A/Prof J Lu; Dr G Zhang; Prof D Ruan
Approved Project Title **A Comprehensive Platform for Dynamic Decision Support in Warning Systems through Better Management of Uncertain Information**
2008 : \$ 69,000
2009 : \$ 63,000
2010 : \$ 59,000
Primary RFCD 2801 INFORMATION SYSTEMS
Administering Organisation University of Technology, Sydney

Project Summary

Public and individual warning systems are installed widely in Australia for emergency situations such as fire, terrorist attack, tsunami, and financial risk. The developed platform with its uncertain information management and dynamic decision support software will directly assist Australian government agencies, industries, and professional officers responsible for public warning systems by improving the reliability of generated warnings, effective design of any new warning system, and accurate decision making in responding threats. It will also greatly contribute to the processing of uncertain information in other organizational information systems, and enhance training exercise facilities in complex emergency environments.

DP0880693 Prof A Novikov; A/Prof K Borovkov; Dr MJ Craddock
Approved Project Title **Boundary Crossing Analysis for Random Processes with Applications to Risk Management**
2008 : \$ 80,000
2009 : \$ 80,000
2010 : \$ 75,000
Primary RFCD 2302 STATISTICS
Administering Organisation University of Technology, Sydney

Project Summary

Effective management of environmental, financial and superannuation investment risks is vitally important for Australia. Results of the project will add to the theoretical foundations of risk management and provide new computational tools for specialists working in the areas of financial engineering, insurance, superannuation funds. These tools will assist in improving risk profile evaluation and developing new statistical control charts for security monitoring of epidemics, networks intrusions and other potentially dangerous changes. The research will also give Australia a competitive advantage in the area of education related to stochastic processes, mathematical finance, control theory and their applications.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0878155 Prof E Platen; A/Prof E Schlogl
Approved Project Title Pricing and Hedging Extreme Maturity Contracts
2008 : \$ 100,000
2009 : \$ 100,000
2010 : \$ 100,000
2011 : \$ 40,000
Primary RFCD 3503 BANKING, FINANCE AND INVESTMENT
Administering Organisation University of Technology, Sydney

Project Summary

Most Australians belong to superannuation schemes. Hence, the long term performance and risk of these investments is of particular importance to the welfare of Australia. This research will improve the life-long financial security of Australians by clearly demonstrating that many superannuation targets can be achieved with less capital than currently suggested. This project will provide new technology for enhancing the long term performance of superannuation funds, managed funds, investment banks and insurance companies, giving these Australian institutions a competitive advantage and permitting them to offer innovative financial products to mitigate extreme maturity financial risk in retirement.

DP0879789 Prof SJ Simoff; Prof JK Debenham; Prof C Sierra; Prof IF Wilkinson
Approved Project Title "It's all about me" - Anthropomorphised Trading in Believable Electronic Markets
2008 : \$ 123,210
2009 : \$ 118,000
2010 : \$ 112,000
Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING
Administering Organisation University of Technology, Sydney

Project Summary

There is a need for trustful business environments that will open up the e-markets to a greater population of traders. This project looks at the development of believable e-markets that address this need. Proposed 3D electronic institution technology is expected to facilitate the establishment of robust business structures as the believability of the business activities and interactions in such e-markets will ensure the principles of trust and reputation in the electronic markets of tomorrow.

DP0877539 Dr M Zareie; Dr AM McDonagh
Approved Project Title New metal-molecule binding motifs for self-assembled monolayers and nanodevices.
2008 : \$ 130,000
2009 : \$ 100,000
2010 : \$ 90,000
Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING
Administering Organisation University of Technology, Sydney

Project Summary

The goal of this research is to investigate technologically interesting electronic materials using new molecular assemblies. We explore their application in some fundamental components of molecular electronic systems and anticipate that knowledge gained from our investigations will have significant impact on the field of nanotechnology, especially in the area of molecular electronics. Our basic research will contribute to Australia's reputation as a source of innovative research and ideas in an area where there is growing international momentum.