

Western Australia

Murdoch University

DP0881114 Dr PL Bartlett

Approved Project Title **Complete calculation of positron- and electron-impact scattering of atoms**

2008 : \$ 78,648

2009 : \$ 78,648

2010 : \$ 78,648

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

APD Dr PL Bartlett

Administering Organisation Murdoch University

Project Summary

This research will facilitate a deeper understanding of the interaction of positrons (antimatter) with matter. These interactions are fundamental to Positron Emission Tomography used for medical imaging and Positron Annihilation Lifetime Spectroscopy used for characterisation of materials. This project will provide a fundamental theoretical description of positronium formation that combined with other multidisciplinary research within the ARC Centre of Antimatter-Matter Studies will improve our knowledge of, and efficacy, of these techniques.

DP0881132 Prof DT Hill

Approved Project Title **Indonesia in exile: The Indonesian Left abroad during the late Cold War**

2008 : \$ 48,976

2009 : \$ 23,675

2010 : \$ 32,972

Primary RFCD 4202 LITERATURE STUDIES

Administering Organisation Murdoch University

Project Summary

Since ousting President Suharto in 1998 Indonesians have been striving to make sense of a turbulent political past and re-evaluating long-held assumptions, including about communism. After decades of political suppression, there are signs some new form of polity will emerge in which a long-suppressed Left might play a part and which Australia needs to understand. Since diasporic, exilic communities are a potential source of inter-state tension, and possible irritant in Australian-Indonesian relations, it is important for Australia to understand the role such communities may play in sustaining and transmitting alternative political visions, and in challenging the state. [97]

DP0880896 Dr KG Nandasena; A/Prof JG Howieson; Prof CA Atkins; Dr RP Tiwari; Prof CW Ronson

Approved Project Title **Evolution of diverse symbiotic phenotypes among native soil bacteria following spread of a genomic island from a rhizobial inoculant**

2008 : \$ 100,000

2009 : \$ 90,000

2010 : \$ 90,000

Primary RFCD 2703 MICROBIOLOGY

Administering Organisation Murdoch University

Project Summary

The quality of legume protein depends on symbiotic nitrogen fixation by root nodule bacteria (RNB). Sustainable legume production in Australian agriculture depends on legume inoculation with effective strains of these bacteria. Unfortunately inoculant strains transfer DNA to other soil bacteria resulting in soil populations of RNB that compete for nodulation but are less effective in nitrogen fixation. This transfer of DNA threatens a \$2 billion asset in Australian agriculture. We will use molecular microbial ecology to investigate the mechanisms of genetic transfer of symbiotic DNA in RNB, and use this knowledge to prevent it.

Summary of Discovery Projects Proposals for Funding to Commence in 2008

DP0881472 Prof RC Thompson; Dr PT Monis; Dr PL Clode; Dr RM O'Handley; Prof M Olson

Approved Project Title **Interaction of Cryptosporidium lifecycle stages with aquatic biofilm communities**

2008 : \$ 87,000

2009 : \$ 87,000

Primary RFCD 3005 VETERINARY SCIENCES

Administering Organisation Murdoch University

Project Summary

Cryptosporidium is the most common non-viral cause of diarrhoeal disease in humans worldwide, and of increasing significance as a cause of disease in livestock and wildlife. It is one of the most significant waterborne pathogens and a major challenge to the provision of safe drinking water by water utilities. Biofilms are a poorly studied component of Cryptosporidium's ecosystem, and can act as an environmental reservoir of the parasite in water storages and pipes and an unpredictable source of water contamination. This project will investigate the nature of this reservoir and factors that support the parasite's survival with a view to providing information of value in limiting the public health significance of the biofilm reservoir.

DP0880961 A/Prof C Warren; Dr JF McCarthy; Dr GL Acciaioli; Dr AE Lucas; Dr J Schiller; Prof L Visser

Approved Project Title **Social Capital, Natural Resources and Local Governance in Indonesia**

2008 : \$ 228,329

2009 : \$ 191,757

2010 : \$ 77,513

Primary RFCD 3701 SOCIOLOGY

Administering Organisation Murdoch University

Project Summary

Australia's relationship with Indonesia is critical to our political and environmental security. This proposed research addresses the need for more effective development assistance policy, and will broaden public understanding of Indonesia's urgent social and environmental issues. International collaboration among an experienced team of field researchers, working with government agencies and NGOs, will enhance the capacity of Indonesian communities to achieve more sustainable and equitable outcomes, contributing to regional security. Social capital questions concerning local capacity building and public engagement in decision-making also have comparative importance for the role of civil society and NGOs in Australian public policy.