

Summary of Linkage Projects Proposals for Funding to Commence in 2007

Western Australia

Murdoch University

LP0776740 A/Prof GE Hardy; Em/Prof JA McComb; Dr PA O'Brien; Dr IJ Colquhoun

Approved Project Title **Long-term survival of Phytophthora cinnamomi in black gravel soils on mining leases in the jarrah (*Eucalyptus marginata*) forest**

2007 : \$ 12,813

2008 : \$ 25,627

2009 : \$ 25,627

2010 : \$ 12,813

Primary RFCD 2704 BOTANY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Alcoa World Alumina Australia

Administering Organisation Murdoch University

Project Summary

Approximately 41% of the 5750 plant species in Western Australia are susceptible to *Phytophthora cinnamomi* a pathogen recognised as a key threatening process to Australia's biodiversity by the Federal Government. This project will enhance our understanding of how the pathogen survives in soil and tolerant plant species. It will determine how the pathogen is able to survive long-term as dormant propagules and how this dormancy can be broken. This project will be relevant to managers of natural ecosystems and to the horticultural industries throughout Australia and will assist in developing effective ways to manage this ecologically devastating plant pathogen.

LP0776970 Prof MG Jones; Prof JL Dale

Approved Project Title **Combinatorial controlled gene expression delivering crops resistant to nematodes**

2007 : \$ 40,000

2008 : \$ 80,000

2009 : \$ 80,000

2010 : \$ 40,000

Primary RFCD 2704 BOTANY

Collaborating/Partner Organisation(s)

Dardin Agri Holdings Australia Pty Ltd / AZTECH Group of Companies

Administering Organisation Murdoch University

Project Summary

Root-knot nematodes cause US\$130 billion crop losses worldwide pa, and at least AUS\$ 450 pa in Australia. Current control methods involve fumigation, chemicals (mainly carbamates and organophosphates), natural plant resistance and biological control. The fumigants (eg methyl bromide) are being phased out because they damage the ozone layer, most of the non-fumigants are being banned because of environmental damage and persistence in groundwater, and biological control has had limited success. These problems are addressed in this project with development of synthetic plant resistance to nematodes, which will benefit horticultural and broadacre farming by reducing pathogen losses and improving quality.

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LP0776541 Prof PM May; A/Prof GT Hefter

Approved Project Title **Redox processes in Bayer liquors**

2007 : \$ 74,500

2008 : \$ 152,000

2009 : \$ 158,000

2010 : \$ 80,500

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

AMIRA International Limited

Administering Organisation Murdoch University

Project Summary

Alumina, and the aluminium produced from it, are amongst Australia's most important mineral commodities, earning about \$8 billion p.a. in exports. However, ongoing technological improvements are needed for Australian producers to remain globally competitive. This project addresses a key problem in alumina production - the behaviour of organic impurities - which will help to increase industrial productivity and reduce energy consumption. Insights gained from this research will also minimize the environmental and occupational health impacts of various process emissions, making the industry more sustainable.

LP0776618 Em/Prof JA McComb; Mr C Newell; A/Prof B Dell

Approved Project Title **Propagation of terrestrial orchids for cultivation and conservation using in vitro symbiotic germination and tuberisation .**

2007 : \$ 21,000

2008 : \$ 42,000

2009 : \$ 42,000

2010 : \$ 21,000

Primary RFCD 3003 HORTICULTURE

Collaborating/Partner Organisation(s)

New Pro Microculture

Administering Organisation Murdoch University

Project Summary

The objective is to make Australian terrestrial orchids which have spectacular and unusual flower shapes and colours easier to grow, by producing tubers coated with mycorrhizal fungi. The availability of such propagules will be of value for horticulture, reintroduction of orchid species when rehabilitating mined land, and restoration of populations of rare and endangered species. At present germination of the dust-like seeds with the appropriate mycorrhizal fungus, and handling the slow growing delicate seedlings makes these beautiful species unavailable except to the dedicated orchid enthusiast.

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LP0776722 Prof A McMurray; Prof F Stanley; Prof B Down; Dr PA Stumbles; A/Prof GE Kendall; Prof BJ Waddell; Dr M Sims; Dr P Franklin; Ms DA Shaw; Mr SJ Smith; Ms FK Skelton; Ms J Pitcher; Dr E Mattes; Prof C Michael

Approved Project Title **Our Children, Our Families, Our Place: Enabling Communities for Child Health and Wellbeing.**

2007 : \$ 54,090

2008 : \$ 104,090

2009 : \$ 120,000

2010 : \$ 114,000

2011 : \$ 44,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

WA Department of Health

WA Department of Education and Training

Peel Health Foundation

Department of Health and Ageing

Department of Transport and Regional Services

Department of Education, Science and Training

Department of Family and Community Services and Indigenous Affairs

St John of God Health Services

Administering Organisation Murdoch University

Project Summary

This study focuses on community capacity building, participation and reciprocal knowledge development, early prevention and intervention, and multi-tiered intersectoral collaboration to ensure efficient use of resources and maximise positive outcomes for children. The project is set in the Peel Region of WA, among the fastest growth areas in Australia with sufficient sub-populations of interest to enable innovative multilevel statistical modelling techniques to inform other regions across Australia. In addition, the study will implement and evaluate a suite of interventions.