

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

Western Australia

The University of Western Australia

LP100200113 Prof Martin Barbetti, Prof Dr Krishnapillai Sivasithamparam

Approved Project Title Factors responsible for host resistance to the pathogen *Sclerotinia sclerotiorum* for developing effective disease management in vegetable brassicas

2010	\$50,000.00
2011	\$105,000.00
2012	\$130,000.00
2013	\$75,000.00
2014	
2015	

Primary FoR 0706 HORTICULTURAL PRODUCTION

Partner/Collaborating Organisation(s)

Department of Agriculture and Food WA

Administering Organisation The University of Western Australia

Project Summary

Through successful identification of host resistance in vegetable Brassicas to *Sclerotinia sclerotiorum* and determining the factors associated with this resistance, breeders, for the first time, will be able to develop varieties with resistance against this difficult-to-manage pathogen. Benefits include prevention of severe losses in vegetable Brassicas from *Sclerotinia*, and more viable and sustainable production with less reliance upon fungicides and toxic or ineffective fumigants. This research addresses the National Research Priority, an environmentally sustainable Australia, and the priority goal transforming existing industries, and will particularly benefit Australian horticultural communities.

LP100200085 Prof William Erskine, A/Prof Philip E Vercoe, Prof Rudi Appels, Dr Phillip G Nichols, Dr Andrew N Thompson, Dr Clinton K Revell, Mr Richard Snowball, Ms Fiona M Jones

Approved Project Title Exploiting subterranean clover genetic variation for methane mitigation and ruminant health challenges to the Australian livestock industries

2010	\$35,000.00
2011	\$70,000.00
2012	\$70,000.00
2013	\$35,000.00
2014	
2015	

Primary FoR 0703 CROP AND PASTURE PRODUCTION

Partner/Collaborating Organisation(s)

Department of Agriculture and Food WA

Administering Organisation The University of Western Australia

Project Summary

Subterranean clover is the most widely sown annual pasture legume species in southern Australia. It is native to the Mediterranean basin and has been sown over an estimated area of 22 million hectares. This project will provide breeders with a genomic resource for future breeding programs focused on methane emission mitigation and ruminant health. The focused marker assisted breeding will lead to more efficient and effective breeding of elite cultivars for sustainable and profitable farming systems to benefit the wool and meat industries. Low methanogenic pastures with low isoflavone content offer an exciting avenue for agriculture to reduce its carbon footprint whilst maintaining or improving profitability.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200584	Prof Martin V Fey, Prof Christoph B Hinz, Prof Andries B Fourie, Prof Richard W Bell, Dr Ian R Phillips	
Approved Project Title	Anticipating closure of bauxite refineries in Western Australia: the water quality implications of a proposed new design in residue storage areas	
2010		\$47,500.00
2011		\$87,500.00
2012		\$77,500.00
2013		\$37,500.00
2014		
2015		
Primary FoR	0503	SOIL SCIENCES

APAI 1

Partner/Collaborating Organisation(s)

Alcoa of Australia Ltd, Worsley Alumina Pty Ltd

Administering Organisation The University of Western Australia

Project Summary

Refining bauxite is a major industrial activity in Australia, with economic benefits and a high potential for environmental impact. Many bauxite refineries are sited in rural areas. Community interests are given high priority in developing strategies for long-term storage of residue. These community interests include minimal impact on farmland, water, health and natural ecosystems. Some of the refinery residue can be re-used in applications such as road construction, thus reducing the need to find other materials for this purpose. This project will investigate new residue management practices which could lead to better ways of establishing a sustainable vegetation cover and avoiding the impact of drainage water on the environment.

LP100200173	Prof Andries B Fourie, Prof Martin Fahey	
Approved Project Title	Behaviour of a cementing slurry in a full-scale mining stope	

2010		\$55,000.00
2011		\$110,000.00
2012		\$110,000.00
2013		\$55,000.00
2014		
2015		
Primary FoR	0914	RESOURCES ENGINEERING AND EXTRACTIVE METALLURGY

APAI 1

Partner/Collaborating Organisation(s)

Barrick Gold of Australia Limited , Panoramic Resources Ltd

Administering Organisation The University of Western Australia

Project Summary

Any mining technique that allows improved extraction of ore from underground workings results in improved financial viability of the mining process concerned. Such improved extraction rates are being achieved by backfilling previously mined voids with cemented mine waste, which also improves stability of the underground workings. This research will further improve the financial viability of mines using this technique by reducing the amount of cement used, without compromising the safety of workers. In some otherwise marginal mines, these savings could be the difference between the mine staying open and being placed on care-and-maintenance, with the potential loss of jobs in mainly remote parts of the country.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200874	Prof Tim W Mazzarol, Prof Geoffrey N Soutar, Prof Kadambot Siddique, Prof John Watson, Asst Prof Joanne N Sneddon, Mr Peter T Wells, Dr Elena A Mamouni Limnios	
Approved Project Title	Sustainable cooperative enterprise: an investigation into the factors influencing the sustainability and competitiveness of cooperative enterprises	
2010		\$44,500.00
2011		\$89,000.00
2012		\$84,591.00
2013		\$40,091.00
2014		
2015		
Primary FoR	1503	BUSINESS AND MANAGEMENT

APDI Dr Elena A Mamouni Limnios

Partner/Collaborating Organisation(s)

Capricorn Society Limited - Australia, CBH Group, Co-operatives WA

Administering Organisation The University of Western Australia

Project Summary

From a national perspective the top 100 Co-operative enterprises control a combined turnover of around \$20 billion and provide employment and economic benefits to many thousands of people across both regional and rural Australia. In Western Australia (WA) there are around 70 Co-operatives working across a wide range of industries including fishing, farming, retailing and services sectors. Despite their significance, there is relatively little research available on drivers of the Co-operative business model and what makes it both unique and competitive. This project will address these issues and assist Co-operatives WA to prepare for the introduction of new state legislation and provide research of benefit to Co-operatives at the national level.

LP100200749	Prof Andrew C Page, Mr Geoffrey R Hooke	
Approved Project Title	A mental health "thermometer" to monitor and prevent adverse treatment outcomes and self-harm among psychiatric inpatients	
2010		\$15,000.00
2011		\$30,000.00
2012		\$36,000.00
2013		\$39,500.00
2014		\$37,500.00
2015		\$19,000.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

APAI 1

Partner/Collaborating Organisation(s)

Perth Clinic

Administering Organisation The University of Western Australia

Project Summary

Our project stands to prevent adverse outcomes in psychiatric patients. An estimated 660 000 people are admitted to psychiatric hospitals each year; 99 000 of these people are worse off following treatment (assuming a deterioration rate of 15 per cent). Since monitoring can halve that rate, if this project can halve the deterioration rate again, then 24 750 inpatients across the nation would not be worse off after treatment representing an annual saving of nearly \$19.2 million per annum and reduce the number of patients who fall into a cycle of admission and readmission. Further, although suicide occurs in less than one per cent of admissions, if this research is able to predict and then reduce the suicide rate by as little as 10 per cent, then 660 lives can be saved each year.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200016	Prof Julie A Plummer, A/Prof Emilio L Ghisalberti, Dr Treena I Burgess, Dr Elizabeth L Barbour, Prof Joerg C Bohlmann	
Approved Project Title	Molecular characterisation of the fungal disease defence response in tropical sandalwood (Santalum album)	
2010		\$58,500.00
2011		\$108,500.00
2012		\$100,000.00
2013		\$50,000.00
2014		
2015		
Primary FoR	0607	PLANT BIOLOGY

APAI 1

Partner/Collaborating Organisation(s)

Forest Products Commission WA, Integrated Tree Cropping Ltd

Administering Organisation The University of Western Australia

Project Summary

The tropical sandalwood industry in Australia is a highly profitable and expanding enterprise; however this cannot be taken for granted. Fungal diseases in tropical plantations are of increasing concern to growers and left unchecked could result in substantial economic loss and an unsustainable industry. This research seeks to understand the defence response of the tree in order to develop tools to combat fungal disease by rapid selection of highly resistant trees. Essential oil production is also linked to the defence response. Understanding this response as well as exploring chemical means of increasing both disease resistance and oil production will deliver a substantial economic benefit to the expanding tropical sandalwood industry.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200507 Prof Fiona J Stanley, A/Prof Helen M Leonard, Prof Nicholas de Klerk, Dr Jianghong Li, Dr Natasha Nassar, Prof Stephen R Zubrick, A/Prof Catherine L Taylor, Mr Eddie Bartnik, Mr Patrick Walker, Ms Cheryl Gwilliam, Mr Ian Johnson, Mr Tim Marney, Mr Terry Murphy, Dr Karl O'Callaghan, Ms Sharyn O'Neill, Mr Grahame Searle, Dr Ronald Chalmers, Dr Melissa O'Donnell, Dr Amanda T Langridge, Ms Diana Rosman, Dr Peter T Flett

Approved Project Title Pathways, policies and prevention: better outcomes for western Australian children

2010		\$216,127.50
2011		\$469,252.00
2012		\$513,592.00
2013		\$485,130.50
2014		\$317,418.00
2015		\$92,755.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

APAI 4

APDI Dr Melissa O'Donnell

Partner/Collaborating Organisation(s)

Disability Services Commission WA, Government of Western Australia Department of Housing, WA Department for Child Protection, WA Department for Communities, WA Department of Corrective Services, WA Department of Education and Training, WA Department of Indigenous Affairs, WA Department of the Attorney General, WA Department of Treasury and Finance, WA Police, Western Australian Department of Health

Administering Organisation The University of Western Australia

Project Summary

This project will provide new knowledge to inform and enable future policy and prevention strategies for improving child health and wellbeing. The collaboration between researchers and policy makers across 11 government departments will deliver a new evidence base for understanding child, family and community level factors that increase or reduce vulnerability to poor outcomes through the utilisation of cross-sectoral population data. This collaboration will inform whole of government intervention and prevention strategies to improve outcomes, as well as evaluate and monitor existing initiatives. This project will provide a model for population-based research and policy development both nationally and internationally.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200135	Prof Dongke Zhang, Prof Zhihong Xu, Prof John W Cairney, Dr Chengrong Chen, A/Prof Hong Yang, A/Prof Ian C Anderson, Prof Vishnu K Pareek	
Approved Project Title	Synthetic natural gas and biochar from biomass for energy services in remote communities and soil carbon sequestration	
2010		\$250,000.00
2011		\$500,000.00
2012		\$500,000.00
2013		\$550,000.00
2014		\$500,000.00
2015		\$200,000.00
Primary FoR	0904	CHEMICAL ENGINEERING

APAI 4

Partner/Collaborating Organisation(s)

ANSAC Pty Ltd, BHP Billiton Iron Ore Pty Ltd, Department of Agriculture and Food WA, ENN

Administering Organisation The University of Western Australia

Project Summary

Resources, industry and rural communities, the backbone of Australian economy, are confronted by unprecedented challenges of carbon pollution reduction, land conservation and eco-sustainability to combat global climate change. This exciting, highly integrated and multidisciplinary project will develop a scientific basis and technological options for the resources industry and remote communities to respond to these challenges. The outcomes of this research will enable the deployment of renewable biomass energy technology, bio-char for carbon storage, and affect the restoration of marginal lands and salinity levels in an environmentally and economically sustainable way, thus contributing to the development of an environmentally sustainable Australia.

LP100200136	Prof Dongke Zhang	
Approved Project Title	Methanol to diesel	
2010		\$100,000.00
2011		\$185,000.00
2012		\$180,000.00
2013		\$95,000.00
2014		
2015		
Primary FoR	0904	CHEMICAL ENGINEERING

APAI 1

Partner/Collaborating Organisation(s)

Chevron Energy Technology Pty Ltd

Administering Organisation The University of Western Australia

Project Summary

Australia has large remote gas reserves which are not accessible to markets via pipeline and cannot be effectively utilised using liquefied natural gas technology. Fischer-Tropsch conversion of gas to liquid (GTL), being capital intense, is uneconomical for these stranded gas resources. This project will develop a new GTL technology to produce sulphur-free, clean combustion diesel. The outcomes of this research will be a frontier technology that allows more effective utilisation of Australian remote gas resources to meet rising global demand for transport fuels, adding enormous value to Australian natural resources and contributing to Building and Transforming Australian industries.

Summary of Successful Linkage - Projects Proposals for Funding to Commence in 2010 by State and Organisation

LP100200137	Prof Dongke Zhang, Prof Jinhu Wu	
Approved Project Title	An innovative two-phase anaerobic process for biogas production from green waste and animal droppings for remote communities	
2010		\$27,500.00
2011		\$57,500.00
2012		\$57,500.00
2013		\$27,500.00
2014		
2015		
Primary FoR	0904	CHEMICAL ENGINEERING

Partner/Collaborating Organisation(s)

Qingdao Institute of Bioenergy and Bioprocessing Technology, South Coast Natural Resource Management Inc

Administering Organisation The University of Western Australia

Project Summary

Australia's remote communities, including agricultural and Indigenous communities, are an important part of Australian society and a significant contributor to the Australian economy, yet their access to cheap, secure, reliable and clean energy remains a significant challenge. Building on recent scientific advancement in anaerobic digestion, this project will develop a new technology for biogas production using locally available resources such as green waste and animal droppings. The outcome of this project will provide clean energy services to regional communities while minimising greenhouse gas emissions associated with waste disposal and thus contribute to the development of an environmentally sustainable Australia.