

**Number of Successful Proposals for ARC Future Fellowships to Commence in
2010 by State and Organisation**

New South Wales

Macquarie University	3
The University of New South Wales	14
The University of Newcastle	2
The University of Sydney	21
University of Technology, Sydney	3
University of Western Sydney	1
University of Wollongong	4

New South Wales **48**

Victoria

Baker IDI Heart and Diabetes Institute	1
Deakin University	2
Howard Florey Institute	3
La Trobe University	3
Macfarlane Burnet Institute for Medical Research and Public Health	2
Monash University	17
Murdoch Childrens Research Institute	1
RMIT University	1
The University of Melbourne	17
Walter and Eliza Hall Institute of Medical Research	6

Victoria **53**

Queensland

Australian Institute of Marine Science	2
Griffith University	6
James Cook University	1
Queensland Institute of Medical Research	2
Queensland University of Technology	1
The University of Queensland	31

Queensland **43**

South Australia

The University of Adelaide	8
University of South Australia	4

South Australia **12**

Western Australia

Curtin University of Technology	1
Murdoch University	1
The University of Western Australia	8

Western Australia **10**

**Number of Successful Proposals for ARC Future Fellowships to Commence in
2010 by State and Organisation**

Tasmania

University of Tasmania 6

Tasmania 6

Northern Territory

Charles Darwin University 1

Northern Territory 1

Australian Capital Territory

Commonwealth Scientific and Industrial Research Organisation 2

The Australian National University 25

Australian Capital Territory 27

Total Number of Grants 200

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

New South Wales

Macquarie University

FT100100519 Dr Rebecca Jennings

Approved Project Title **Same-sex partnerships and parenting: policy debates since 1945**

2010		\$71,353.00
2011		\$142,735.00
2012		\$143,023.50
2013		\$134,960.50
2014		\$63,319.00
Primary FoR	2103	HISTORICAL STUDIES

FT1 Dr Rebecca Jennings

Administering Organisation Macquarie University

Project Summary

This project will use interviews to trace same-sex relationships and family models since the Second World War. The research will inform policy debates about same-sex partnerships and parenting and contribute to the well-being of Australians through the articulation of a shared history.

FT100100717 Dr Craig J O'Neill

Approved Project Title **Strength and resistance along oceanic megathrust faults: implications for subduction initiation**

2010		\$73,686.50
2011		\$156,530.50
2012		\$153,938.00
2013		\$141,938.00
2014		\$70,844.00
Primary FoR	0404	GEOPHYSICS

FT1 Dr Craig J O'Neill

Administering Organisation Macquarie University

Project Summary

Hjorta Trench, south of Macquarie Island, is a seismically active boundary of the Australian plate and a unique natural laboratory for study of the initiation of the processes which are currently driving Australia north at 7 millimetres per year. Sophisticated computer models will be used to understand the evolution of this oceanic megathrust system.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100910

Dr Ian J Wright

**Approved
Project Title**

Towards a trait-based plant ecology: new directions in leaf economics research

2010		\$99,899.00
2011		\$196,798.00
2012		\$185,098.00
2013		\$170,223.00
2014		\$82,024.00
Primary FoR	0602	ECOLOGY

FT2

Dr Ian J Wright

Administering Organisation Macquarie University

Project Summary

This work will establish powerful and general global patterns concerning plant functional traits and trait-environment correlations. This knowledge will be useful to researchers across a wide range of disciplines, from plant ecology and physiology to modelling how the world's vegetation will be affected by climate change in coming decades.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

The University of New South Wales

FT100100232 Dr Jennifer L Biddle

Approved Project Title **Remote avant-garde: experimental Indigenous arts**

2010		\$97,163.00
2011		\$197,180.00
2012		\$201,605.00
2013		\$191,622.00
2014		\$90,034.00
Primary FoR	1601	ANTHROPOLOGY

FT2 Dr Jennifer L Biddle

Administering Organisation The University of New South Wales

Project Summary

This project is a history of new visibilities of culture, tradition and survival taking shape for the first time through Indigenous art forms. It positions remote artists as leaders of a new avant-garde through practice-led research linking experimental arts with academic research and scholarship at the highest level.

FT100100411 Dr Till Boecking

Approved Project Title **Visualising chaperones disentangle and refold proteins - one molecule at a time**

2010		\$88,319.00
2011		\$176,638.00
2012		\$174,138.00
2013		\$174,138.00
2014		\$88,319.00
Primary FoR	0299	OTHER PHYSICAL SCIENCES

FT1 Dr Till Boecking

Administering Organisation The University of New South Wales

Project Summary

Chaperones are enzymes that maintain the proper function of proteins in the cell. This research aims to visualise, at the single molecule level, how chaperones facilitate the folding of individual proteins and how they can disentangle proteins that have aggregated as a result of cell stress.

FT100100296 A/Prof Dennis G Del Favero

Approved Project Title **The reformulation of war art as a dialogical interactive narrative**

2010		\$101,521.00
2011		\$192,815.00
2012		\$175,328.00
2013		\$168,593.00
2014		\$84,559.00
Primary FoR	1902	FILM, TELEVISION AND DIGITAL MEDIA

FT2 A/Prof Dennis G Del Favero

Administering Organisation The University of New South Wales

Project Summary

This research uses visualisation technology to explore new ways to communicate and understand the collective experience and personal memories of war. It aims to strengthen Australia's leadership in media arts, facilitating the active participation of defence personnel in the creation of a world-first interactive archive of war stories.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100536 Dr Evatt R Hawkes
Approved Project Title **Accelerating clean automotive innovation: fundamental insights into alternative fuel combustion**

2010		\$85,619.00
2011		\$173,613.00
2012		\$176,113.00
2013		\$176,238.00
2014		\$88,119.00
Primary FoR	0902	AUTOMOTIVE ENGINEERING

FT1 Dr Evatt R Hawkes
Administering Organisation The University of New South Wales

Project Summary

To achieve the maximum efficiency from alternatively fuelled engines, better understanding and predictive models are needed for the major limiting factor in spark-ignition engine efficiency: knock. The project will address this gap, thereby accelerating development of better engines and strengthening national capacity in clean engine technology.

FT100100546 A/Prof Matthias Klugmann
Approved Project Title **Unraveling the role of N-acetyl-aspartate in normal brain function and disease**

2010		\$100,924.00
2011		\$200,685.50
2012		\$200,923.00
2013		\$200,923.00
2014		\$99,761.50
Primary FoR	1109	NEUROSCIENCES

FT2 A/Prof Matthias Klugmann
Administering Organisation The University of New South Wales

Project Summary

The purpose of this project is to define the role of the predominating brain chemical N-acetyl-aspartate for normal nerve cell function and as toxic agent causing neurological illness and severe mental health problems. Findings of this research will enhance the design of novel therapies involving pharmacological and genetic treatment.

FT100100260 Dr Mike Le Pelley
Approved Project Title **Attention please! Selective attention and human associative learning**

2010		\$87,847.50
2011		\$172,931.50
2012		\$173,131.50
2013		\$166,959.50
2014		\$78,912.00
Primary FoR	1702	COGNITIVE SCIENCE

FT1 Dr Mike Le Pelley
Administering Organisation The University of New South Wales

Project Summary

Selective attention allows us to pick useful pieces of information out of the mass of stimulation that we're faced with every moment. This project investigates how what we've previously learnt about the significance of events influences whether we'll pick them out as useful in future, and how this might be impaired by old age or mental disorder.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100956 A/Prof Sean S Li
Approved Project Title **Interface engineering of complex oxide heterostructures for high efficiency thermoelectric energy conversion**

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	0912	MATERIALS ENGINEERING

FT2 A/Prof Sean S Li
Administering Organisation The University of New South Wales

Project Summary

Thermoelectric materials offer an opportunity for economic recovery of the waste heat from exhaust gases to reduce operational costs and greenhouse emissions. Success of this program will facilitate the development of thermoelectric materials with high energy conversion efficiency for viable applications.

FT100100253 A/Prof Sarah Maddison
Approved Project Title **Reconciling nations: what can Australia learn from the international experience of democratic dialogue?**

2010		\$76,649.00
2011		\$175,733.00
2012		\$190,605.50
2013		\$170,645.50
2014		\$79,124.00
Primary FoR	1606	POLITICAL SCIENCE

FT2 A/Prof Sarah Maddison
Administering Organisation The University of New South Wales

Project Summary

This project will draw on international experience to explore the capacity for facilitated, democratic dialogue to revitalise the Australian reconciliation process. Using innovative case study research and an original applied theoretical approach, the project will develop new methods for resolving intercultural conflict in Australia.

FT100100078 Dr Michael J Manefield
Approved Project Title **Harnessing microbial respiration for pollutant degradation and natural gas production**

2010		\$99,676.50
2011		\$201,170.50
2012		\$202,743.00
2013		\$202,873.00
2014		\$101,624.00
Primary FoR	0605	MICROBIOLOGY

FT2 Dr Michael J Manefield
Administering Organisation The University of New South Wales

Project Summary

This project seeks to exploit compounds produced naturally by microorganisms to develop a marketable green technology for environmental restoration and clean energy generation in Australia and abroad. Metropolitan and regional communities will benefit from improved environmental and human health and the economy will benefit from global application.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100443	Dr Katrin J Meissner	
Approved Project Title	What caused abrupt climate change events in the past and what can they tell us about the future?	
2010		\$89,744.50
2011		\$172,553.50
2012		\$167,927.50
2013		\$167,717.50
2014		\$82,599.00
Primary FoR	0401	ATMOSPHERIC SCIENCES

FT2 Dr Katrin J Meissner
Administering Organisation The University of New South Wales

Project Summary

This project will improve our understanding of abrupt climate change in the past, present and future. It will dramatically enhance Australia's capacity to use climate models to assess the probability and associated consequences of abrupt climate change in the future.

FT100100589	Prof Sven Rogge	
Approved Project Title	Performance bottlenecks in ultra-scaled field-effect transistors	

2010		\$114,974.00
2011		\$229,838.00
2012		\$229,838.00
2013		\$229,893.00
2014		\$114,919.00
Primary FoR	0206	QUANTUM PHYSICS

FT3 Prof Sven Rogge
Administering Organisation The University of New South Wales

Project Summary

The comparison of commercial and atomically-precise devices will result in the long sought after atomistic metrology knowledge. Such knowledge is required to achieve a leap forward in device understanding and design in order to improve speed, reliability and energy consumption.

FT100100197	Dr Ashish Sharma	
Approved Project Title	Representing low-frequency variability in hydro-climatic simulations for water resources planning and management in a changing climate	

2010		\$114,879.00
2011		\$207,858.00
2012		\$184,958.00
2013		\$186,458.00
2014		\$94,479.00
Primary FoR	0406	PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE

FT3 Dr Ashish Sharma
Administering Organisation The University of New South Wales

Project Summary

Simulating local hydro-climatology under likely climate change allows risk assessment of existing and future water infrastructure, along with the planning protocols needed to adapt to the changes ahead. This study aims to develop the tools needed to simulate local hydro-climatology, providing a basis for securing water for the generations to come.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100211 Dr Baolin Wang
Approved Project Title **Mechanics of micro/nanoscale multilayers: theories and applications**

2010		\$87,349.00
2011		\$173,698.00
2012		\$172,698.00
2013		\$168,448.00
2014		\$82,099.00
Primary FoR	0913	MECHANICAL ENGINEERING

FT2 Dr Baolin Wang
Administering Organisation The University of New South Wales

Project Summary

The purpose of the project is to develop novel theoretical models, advanced numerical techniques and guidelines for the design and application of micro/nanoscale multilayers. The expected outcomes are fundamental contributions to the knowledge base of micro/nanoscale multilayered materials which are increasingly used in micro/nanotechnology.

FT100100495 Dr Christopher M Wright
Approved Project Title **Revealing star and planet formation via infrared and millimetre-wave observations**

2010		\$82,861.50
2011		\$167,148.00
2012		\$167,148.00
2013		\$167,148.00
2014		\$84,286.50
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT2 Dr Christopher M Wright
Administering Organisation The University of New South Wales

Project Summary

Disks of dusty material around young stars are the birth places of planetary systems. By looking at the growth phase of dust from sub-micron to centimetre sizes, the evolution of the dust's composition and mineral structure, and the internal structure of the disk itself, we aim to better understand the physical processes behind planet building.

**Summary of Successful ARC Future Fellowships Proposals for Funding
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The University of Newcastle

FT100100539 A/Prof Kristian Krabbenhoft

Approved **Modelling and simulation of complex granular flows**

Project Title

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	0905	CIVIL ENGINEERING

FT2 A/Prof Kristian Krabbenhoft

Administering Organisation The University of Newcastle

Project Summary

Granular flows are of crucial importance in a wide range of problems related to civil infrastructure. These include landslides and similar catastrophic events, often leading to loss of life and property. The project aims to develop new methods for accurate prediction of such events thus allowing for the formulation of efficient mitigation strategies.

FT100100439 A/Prof Paulette M van Vliet

Approved **Mapping, recovery and remediation of arm coordination deficits after stroke**

Project Title

2010		\$85,788.50
2011		\$172,060.00
2012		\$169,035.50
2013		\$157,543.00
2014		\$74,779.00
Primary FoR	1103	CLINICAL SCIENCES

FT1 A/Prof Paulette M van Vliet

Administering Organisation The University of Newcastle

Project Summary

Coordination of arm movement is a significant problem after a stroke. This innovative project will underpin new treatments by focusing on what type of stroke causes difficulty in coordinating arm movement, describing the coordination difficulties in detail and investigating mechanisms of recovery and treatment.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

The University of Sydney

FT100100928 Dr Hisatomi Arima

Approved Project Title **Benefits of blood pressure lowering to combat cardiovascular disease**

2010	\$77,319.00
2011	\$152,638.00
2012	\$152,638.00
2013	\$152,638.00
2014	\$75,319.00

Primary FoR 1102 CARDIOVASCULAR MEDICINE AND HAEMATOLOGY

FT1 Dr Hisatomi Arima

Administering Organisation The University of Sydney

Project Summary

Stroke and heart attack are the commonest causes of death and adult disability. In Australia, approximately 50,000 people die from cardiovascular disease each year. This project will attempt to prevent stroke/heart attack and to improve quality of life by exploring better management of high blood pressure.

FT100100077 Prof Alison C Bashford

Approved Project Title **Climate change and the history of environmental determinism**

2010	\$106,061.00
2011	\$213,079.50
2012	\$218,520.50
2013	\$208,987.00
2014	\$97,485.00

Primary FoR 2202 HISTORY AND PHILOSOPHY OF SPECIFIC FIELDS

FT3 Prof Alison C Bashford

Administering Organisation The University of Sydney

Project Summary

In previous centuries, most scientists presumed that environment and climate determined human health, capacities and difference. By tracing this longstanding idea through the twentieth century, this project will identify implications for current climate science.

FT100100179 Dr Saliha Belmessous

Approved Project Title **Indigenous land claims in historical context**

2010	\$81,508.00
2011	\$162,880.00
2012	\$162,195.00
2013	\$161,781.00
2014	\$80,958.00

Primary FoR 2202 HISTORY AND PHILOSOPHY OF SPECIFIC FIELDS

FT1 Dr Saliha Belmessous

Administering Organisation The University of Sydney

Project Summary

By enlightening the history of Indigenous legal opposition to dispossession from the beginning of colonisation, this project will provide a means of engaging with the political challenges and responses posed by legal conflicts with Indigenous peoples over the question of land.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100543 Dr Melinda Cooper
Approved Project Title **Experimental workers of the world - the labour of human research subjects in the emerging bioeconomies of China and India**

2010	\$79,973.50
2011	\$158,664.50
2012	\$158,456.50
2013	\$143,084.50
2014	\$63,319.00
Primary FoR	1608 SOCIOLOGY

FT1 Dr Melinda Cooper
Administering Organisation The University of Sydney

Project Summary

China and India have become significant new hubs for domestic and multinational clinical trials, the process by which new drugs are tested for global consumption. Developing the concept of experimental labour, this project will investigate the growing numbers of the poor and uninsured who enrol in clinical trials as a means of making a living.

FT100100457 A/Prof Scott M Croom
Approved Project Title **Dissecting galaxy evolution**

2010	\$101,315.00
2011	\$202,554.50
2012	\$202,234.50
2013	\$201,394.00
2014	\$100,399.00
Primary FoR	0201 ASTRONOMICAL AND SPACE SCIENCES

FT2 A/Prof Scott M Croom
Administering Organisation The University of Sydney

Project Summary

This project will exploit new Australian optical fibre technology to produce a next-generation galaxy survey with spatially resolved spectroscopy. Outstanding issues in galaxy formation will be addressed, directly discerning the mechanisms behind the triggering and suppression of star formation as well as the feeding of super-massive black holes.

FT100100779 Dr Feike A Dijkstra
Approved Project Title **Drought effects on soil carbon and nitrogen cycling mediated by rhizosphere processes**

2010	\$88,206.50
2011	\$176,438.00
2012	\$176,238.00
2013	\$175,813.00
2014	\$87,806.50
Primary FoR	0501 ECOLOGICAL APPLICATIONS

FT1 Dr Feike A Dijkstra
Administering Organisation The University of Sydney

Project Summary

There is much uncertainty about how drought caused by global warming will affect agricultural sustainability in Australia. This project will provide new knowledge about plant-soil interactions affecting carbon and nutrient cycling and will make predictions about long-term soil carbon storage and agricultural productivity in response to drought.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100376 A/Prof Andy Dong
Approved **Inventiveness and the progress of product innovation**
Project Title

2010		\$82,019.00
2011		\$168,613.00
2012		\$166,363.00
2013		\$166,363.00
2014		\$86,594.00
Primary FoR	1702	COGNITIVE SCIENCE

FT2 A/Prof Andy Dong
Administering Organisation The University of Sydney

Project Summary

Quantitative models of inventiveness will be used to forecast the potential rate of improvement of a technology and to re-design products to improve more rapidly and steadily. By focusing on innovation in products and technologies in energy conversion, this research can guide development funding for low-carbon energy generation.

FT100100755 Dr Joachim Gudmundsson
Approved **Algorithms and data structures to support automated analysis of trajectory data**
Project Title

2010		\$85,174.00
2011		\$168,035.50
2012		\$167,635.50
2013		\$167,635.50
2014		\$82,861.50
Primary FoR	0802	COMPUTATION THEORY AND MATHEMATICS

FT2 Dr Joachim Gudmundsson
Administering Organisation The University of Sydney

Project Summary

The emergence of a variety of tracking devices, surveillance systems and even electronic transaction and phone networks has resulted in the production of large amounts of positional information for vehicles, people and animals. The aim of the project is to develop tools that support automated analysis of such data sets.

FT100100663 A/Prof Andrew T Harris
Approved **Hierarchically structured carbon nanotube catalysts for the conversion of biomass to fuels and chemicals**
Project Title

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	0904	CHEMICAL ENGINEERING

FT2 A/Prof Andrew T Harris
Administering Organisation The University of Sydney

Project Summary

Australia has significant biomass resources, which can be used to produce industrial chemicals and transport fuels. This project will develop a new family of carbon-nanotube-supported catalysts that will lead to improvements in process efficiency and performance for biofuels production.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100091 A/Prof Justin A Harris
Approved **The metrics of associative learning**
Project Title

2010		\$101,639.00
2011		\$203,288.00
2012		\$203,298.00
2013		\$203,279.00
2014		\$101,630.00
Primary FoR	1701	PSYCHOLOGY

FT2 A/Prof Justin A Harris
Administering Organisation The University of Sydney

Project Summary

All animals readily learn about associations between events in their environment, allowing them to use their past experience to predict future events based on current circumstances. This project develops a new approach to studying this simple learning process in humans and uses the approach to investigate the basis of this learning in the brain.

FT100100518 Dr Adrian H Hearn
Approved **Clarifying transparency: Chinese aid and trade in Latin America**
Project Title

2010		\$67,096.50
2011		\$141,787.50
2012		\$145,940.00
2013		\$141,133.00
2014		\$69,884.00
Primary FoR	1606	POLITICAL SCIENCE

FT1 Dr Adrian H Hearn
Administering Organisation The University of Sydney

Project Summary

Consensual understandings of transparency and good governance are crucial to the international accommodation of China's economic rise. Through a quantitative survey and qualitative case studies, this project aims to clarify how these terms generate misunderstandings and hinder potential for dialogue between key U.S., Latin American and Chinese actors.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100514	Prof Cameron J Keper	
Approved Project Title	Functional molecular nanomaterials	
2010		\$114,979.00
2011		\$229,958.00
2012		\$229,958.00
2013		\$229,958.00
2014		\$114,979.00
Primary FoR	0303	MACROMOLECULAR AND MATERIALS CHEMISTRY

FT3 Prof Cameron J Keper
Administering Organisation The University of Sydney

Project Summary

The design and construction of advanced nanomaterials is a key step in the push towards more efficient energy systems and smarter technologies. Through the strategic assembly of new classes of molecular nanomaterials, this project will lead to important fundamental advances in nanoscience and will underpin a range of new high-level technologies.

FT100100098	Dr Maryanne C Large	
Approved Project Title	The development of novel and tunable metamaterials	

2010		\$101,478.00
2011		\$203,127.00
2012		\$194,127.00
2013		\$184,156.00
2014		\$91,678.00
Primary FoR	1099	OTHER TECHNOLOGY

FT2 Dr Maryanne C Large
Administering Organisation The University of Sydney

Project Summary

Metamaterials are designed materials with properties that cannot be found in nature. This project uses a new disruptive design that allows broadband metamaterials to be made using mass production techniques. The design opens up a range of new applications in environmental and medical sensing, improved security screening and active devices.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100268 Prof Geraint F Lewis
Approved Project Title **Caught in the act by PAndAS: An unparalleled view of galaxy evolution**

2010	\$100,024.00
2011	\$195,203.00
2012	\$194,429.00
2013	\$194,429.00
2014	\$95,179.00

Primary FoR 0201 ASTRONOMICAL AND SPACE SCIENCES

FT3 Prof Geraint F Lewis
Administering Organisation The University of Sydney

Project Summary
 How do galaxies, like our own Milky Way, form? Using a new survey of the nearby cosmos, we will search for the signatures of galactic cannibalism, the disrupted bodies of smaller galaxies, and use this archaeology to piece together the formation history. We will also reveal the presence of local dark matter, whose action has shaped our own galaxy's formation.

FT100100603 Prof Christopher G Maher
Approved Project Title **Better prevention and management of disabling back pain**

2010	\$114,912.00
2011	\$229,491.50
2012	\$229,176.50
2013	\$228,941.00
2014	\$114,344.00

Primary FoR 1103 CLINICAL SCIENCES

FT3 Prof Christopher G Maher
Administering Organisation The University of Sydney

Project Summary
 This project will establish a program of back pain research within an inter-disciplinary research centre focused on the prevention and management of physical disability.

FT100100489 A/Prof Deborah J Marsh
Approved Project Title **Understanding endocrine tumorigenesis - opportunities for new diagnostics and therapies**

2010	\$101,649.00
2011	\$203,298.00
2012	\$203,298.00
2013	\$203,298.00
2014	\$101,649.00

Primary FoR 1112 ONCOLOGY AND CARCINOGENESIS

FT2 A/Prof Deborah J Marsh
Administering Organisation The University of Sydney

Project Summary
 This project will generate new knowledge significant for improving cancer diagnosis and designing new therapies for cancer patients as we embrace the personalised medicine era. Specific focus is on endocrine tumours. This research has as its aim improved survival for people diagnosed with cancer.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100295	Prof Bruce C Neal	
Approved Project Title	Towards a healthier food supply: achieving policy change and industry action	
2010		\$102,216.50
2011		\$203,433.00
2012		\$203,433.00
2013		\$203,433.00
2014		\$101,216.50
Primary FoR	1111	NUTRITION AND DIETETICS

FT3 Prof Bruce C Neal
Administering Organisation The University of Sydney

Project Summary

This research aims to identify mechanisms by which to improve the quality of the Australian food supply. The findings will have the potential to inform government and industry policies on healthier foods with the aim of decreasing chronic disease.

FT100100738	Dr Maureen A O'Malley	
Approved Project Title	Transitions and translations in scientific practice	

2010		\$81,606.00
2011		\$151,437.00
2012		\$141,231.50
2013		\$139,208.00
2014		\$67,807.50
Primary FoR	2202	HISTORY AND PHILOSOPHY OF SPECIFIC FIELDS

FT1 Dr Maureen A O'Malley
Administering Organisation The University of Sydney

Project Summary

This project focuses on how life sciences are developing new research practices and new ways of transferring knowledge across disciplines and into society. These transformations will be investigated through collaborations between biologists and philosophers of science, with the aim of better insight into science and its social implications.

FT100100953	A/Prof Peter G Tuthill	
Approved Project Title	Imaging exoplanets with advanced spaceborne photonics	

2010		\$114,828.50
2011		\$228,557.50
2012		\$226,557.50
2013		\$224,057.50
2014		\$111,229.00
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT3 A/Prof Peter G Tuthill
Administering Organisation The University of Sydney

Project Summary

Discovering new worlds circling distant stars is a key endeavour of modern science. Revealing the ubiquity and diversity of exoplanets has profound implications for our perception of our origins and place in the cosmos. This project will open the first window onto the heartland of expected planetary populations.

**Summary of Successful ARC Future Fellowships Proposals for Funding
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FT100100215 Dr Ana Vila Concejo
Approved **Dynamics of carbonate sands and morphodynamics of coral reef environments**
Project Title

2010		\$87,813.50
2011		\$175,732.00
2012		\$174,862.00
2013		\$174,432.50
2014		\$87,489.00
Primary FoR	0403	GEOLOGY

FT1 Dr Ana Vila Concejo
Administering Organisation The University of Sydney

Project Summary

Coral reefs are mainly composed of mobile sedimentary deposits that influence the living regions of the coral reefs. Using sites on Australia's Great Barrier Reef, the project will learn how, why and how fast sand advances, and will predict how these processes will change in response to predicted rises in sea levels.

FT100100176 Prof Catherine J Waldby
Approved **The changing meanings of human eggs in fertility, assisted reproduction and stem cell**
Project Title **research**

2010		\$92,306.50
2011		\$207,285.50
2012		\$229,958.00
2013		\$218,258.00
2014		\$103,279.00
Primary FoR	1699	OTHER STUDIES IN HUMAN SOCIETY

FT3 Prof Catherine J Waldby
Administering Organisation The University of Sydney

Project Summary

Australian women are faced with difficult choices regarding when to have children. Assisted reproductive technologies for donating and banking fertile oocytes (eggs) are becoming important elements in these choices. This research will improve public and professional understanding of the changing meanings oocytes have for various groups of women.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

University of Technology, Sydney

FT100100218 Dr Yuan Feng

Approved Project Title **Reasoning about, and stepwise development of, quantum programs: a predicate transformer semantics approach**

2010 \$70,748.50

2011 \$140,297.50

2012 \$140,297.50

2013 \$140,297.50

2014 \$69,549.00

Primary FoR 0802 COMPUTATION THEORY AND MATHEMATICS

FT1 Dr Yuan Feng

Administering Organisation University of Technology, Sydney

Project Summary

The project will provide a framework to reason about, and stepwise develop, quantum programs by rigorous predicate transformer semantics, and generate breakthrough theory and frontier techniques for quantum software engineering.

FT100100238 Dr Elaine M Jeffreys

Approved Project Title **Philanthropy, celebrity and governance in the People's Republic of China**

2010 \$84,193.00

2011 \$167,362.00

2012 \$164,758.00

2013 \$163,178.00

2014 \$81,589.00

Primary FoR 1699 OTHER STUDIES IN HUMAN SOCIETY

FT2 Dr Elaine M Jeffreys

Administering Organisation University of Technology, Sydney

Project Summary

The project is the first major study of the new phenomenon of celebrity philanthropy and its governance in present-day China. It will provide knowledge of government and philanthropic responses to some of the problems associated with unequal development in China and increase Australians' capacity to engage effectively with a rapidly changing China.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100971 A/Prof Xingquan Zhu
Approved Project Title **Novel data mining techniques for complex network analysis and control**

2010	\$83,558.50
2011	\$165,767.50
2012	\$164,418.00
2013	\$164,418.00
2014	\$82,209.00

Primary FoR 0802 COMPUTATION THEORY AND MATHEMATICS

FT2 A/Prof Xingquan Zhu
Administering Organisation University of Technology, Sydney

Project Summary

This project will develop novel data mining theories and algorithms to analyse complex networks for safe information publishing and sharing across networks. It will enable smart information use in bioinformatics, social science and business intelligence, help protect against cybercrime and promote Australia's international research profile.

University of Western Sydney

FT100100898 A/Prof Andrew R Francis
Approved Project Title **Algebraic evolution and evolutionary algebra**

2010	\$84,599.00
2011	\$168,398.00
2012	\$167,548.00
2013	\$166,968.00
2014	\$83,219.00

Primary FoR 0101 PURE MATHEMATICS

FT2 A/Prof Andrew R Francis
Administering Organisation University of Western Sydney

Project Summary

Algebra and biology have developed in extraordinary ways over the last half century yet, to date, the use of algebraic ideas in biology has been limited. This project will address this by modelling evolutionary processes in bacteria using algebraic ideas.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

University of Wollongong

FT100100656 A/Prof Joseph Ciarrochi

Approved Project Title **A longitudinal study into the development of personal vulnerabilities and well-being in adolescence**

2010		\$96,713.00
2011		\$180,361.50
2012		\$177,389.00
2013		\$191,347.00
2014		\$97,606.50
Primary FoR	1701	PSYCHOLOGY

FT2 A/Prof Joseph Ciarrochi

Administering Organisation University of Wollongong

Project Summary

This longitudinal study examines the temperament and environmental factors that promote character strengths in adolescents. Character strengths such as empathy and emotion-management skills are potentially teachable and help prevent an adolescent from experiencing difficulties in social, emotional and academic adjustment.

FT100100990 Dr Clive H Schofield

Approved Project Title **The Limits of maritime jurisdiction: overcoming uncertainties and safeguarding Australia's interests**

2010		\$101,425.00
2011		\$202,080.00
2012		\$200,675.00
2013		\$200,357.50
2014		\$100,337.50
Primary FoR	1801	LAW

FT2 Dr Clive H Schofield

Administering Organisation University of Wollongong

Project Summary

Research on the definition of baselines along Australia's long, complex and dynamic coastline will assist in the stable definition of the limits of its vast maritime claims. Allied to research on key oceans governance and maritime security challenges, the research will help to safeguard Australia's significant and growing marine resource interests.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

FT100100533 Dr Aidan D Sims
Approved **Operator algebras as models for dynamics and geometry**
Project Title

2010		\$72,069.00
2011		\$141,838.00
2012		\$140,675.50
2013		\$139,175.50
2014		\$68,269.00
Primary FoR	0101	PURE MATHEMATICS

FT1 Dr Aidan D Sims
Administering Organisation University of Wollongong

Project Summary
 Operator algebra is the mathematical theory which describes quantum physics and predicts how quantum systems will behave. Through this project, the researcher's recent discoveries in operator algebra will give us new insight into the dynamics and geometry - that is, the behaviour and shape - of the quantum world.

FT100100384 Dr Gerrit D van den Bergh
Approved **Size matters: elephantoid dispersal, evolution, paleoecology and extinction in Asia**
Project Title

2010		\$87,986.50
2011		\$175,710.50
2012		\$175,098.00
2013		\$167,623.00
2014		\$80,249.00
Primary FoR	2101	ARCHAEOLOGY

FT1 Dr Gerrit D van den Bergh
Administering Organisation University of Wollongong

Project Summary
 This project will investigate the natural history of the once widespread elephant lineages in Asia by studying their fossils and unlocking chemical archives from their teeth. It will provide new insights into their adaptive responses to climate change and life on islands, interactions with humans and the factors that eventually led to their demise.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Victoria

Baker IDI Heart and Diabetes Institute

FT100100918 A/Prof David W Dunstan

Approved Project Title **Excessive sitting and population health: strengthening the science and the relevance to policy and practice**

2010		\$69,569.00
2011		\$139,138.00
2012		\$139,138.00
2013		\$139,138.00
2014		\$69,569.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

FT1 A/Prof David W Dunstan

Administering Organisation Baker IDI Heart and Diabetes Institute

Project Summary

The majority of Australian adults spend most of their waking hours sitting; this increases the likelihood of developing diseases of inactivity, including diabetes, heart disease and some cancers. New research will investigate what factors encourage excessive sitting and what the health benefits are for people who deliberately do less sitting.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Deakin University

FT100100746 A/Prof Matthew R Barnett

Approved Project Title **Growing a multi-scale internal structure: new wrought metals for energy conservation**

2010		\$101,599.00
2011		\$203,198.00
2012		\$202,898.00
2013		\$202,373.00
2014		\$101,074.00
Primary FoR	0912	MATERIALS ENGINEERING

FT2 A/Prof Matthew R Barnett

Administering Organisation Deakin University

Project Summary

This research aims to reduce the weight of wrought metal parts so that transport and machinery will use less energy. It will establish how to grow novel multi-scale internal structures and will thereby pioneer a new class of metals that display superior properties.

FT100100581 Dr Sarah A McNaughton

Approved Project Title **Dietary patterns across the life-course: implications for the prevention of obesity, cardiometabolic disease and public health**

2010		\$88,049.50
2011		\$176,353.50
2012		\$175,366.00
2013		\$167,986.00
2014		\$80,924.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

FT1 Dr Sarah A McNaughton

Administering Organisation Deakin University

Project Summary

This research will focus on dietary patterns in population health across the life-course. We know little about how dietary patterns and their determinants vary across life and the impact of life-stage transitions on diet and health. This research will provide insights into dietary patterns of infants, children, young adults and older adults.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

Howard Florey Institute

FT100100235 Dr Jhodie R Duncan

Approved Project Title **The long-term consequences of toluene exposure on the maturing brain**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	1109	NEUROSCIENCES

FT1 Dr Jhodie R Duncan

Administering Organisation Howard Florey Institute

Project Summary

Inhalant abuse is a significant problem, especially among adolescent and Indigenous communities. This project will provide insights into the long-term neurobiological consequences following inhalant exposure during adolescence when critical aspects of brain development are still occurring, and how these may relate to altered behaviour in adulthood.

FT100100835 A/Prof Anthony J Hannan

Approved Project Title **Gene-environment interactions mediating experience-dependent plasticity in the healthy and diseased brain**

2010		\$114,929.00
2011		\$229,858.00
2012		\$229,858.00
2013		\$229,858.00
2014		\$114,929.00
Primary FoR	1109	NEUROSCIENCES

FT3 A/Prof Anthony J Hannan

Administering Organisation Howard Florey Institute

Project Summary

The aim of this project is to understand how genes and environment combine to affect susceptibility to various brain disorders, using models of human diseases and manipulating environmental factors such as mental and physical activity. The project's focus is on neurological and psychiatric disorders, including Huntington's disease, depression, schizophrenia and autism.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100261	A/Prof Neil Levy	
Approved Project Title	Self-control and pathologies of agency	
2010		\$98,691.00
2011		\$200,028.50
2012		\$202,230.50
2013		\$198,584.00
2014		\$97,691.00
Primary FoR	2203	PHILOSOPHY

FT2 A/Prof Neil Levy
Administering Organisation Howard Florey Institute

Project Summary

This project will develop a philosophically and scientifically sophisticated account of the nature of self-control. This account will provide tools for allocating responsibility for failures of self-control and will contribute to the development of means for enhancing it, thereby aiding in addressing major social problems.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

La Trobe University

FT100100614 Dr Stephen D Morey

Approved Project Title **A multifaceted study of Tangsa: a network of linguistic varieties in North East India**

2010		\$83,191.00
2011		\$162,072.50
2012		\$158,563.00
2013		\$160,113.00
2014		\$80,431.50
Primary FoR	2004	LINGUISTICS

FT1 Dr Stephen D Morey

Administering Organisation La Trobe University

Project Summary

Our world's linguistic and cultural heritage, the product of human evolution, is being lost rapidly due to globalisation and modernisation. This project will record the linguistic diversity of the Tangsa people of North East India, thereby increasing our knowledge of an important regional neighbour and of our human society and history.

FT100100003 Dr Anne F Richards

Approved Project Title **The systematic development of fundamentally important group 15 compounds: their applications to innovative industrial and environmental processes**

2010		\$87,979.00
2011		\$176,298.00
2012		\$176,513.00
2013		\$175,513.00
2014		\$87,319.00
Primary FoR	0302	INORGANIC CHEMISTRY

FT1 Dr Anne F Richards

Administering Organisation La Trobe University

Project Summary

The strong coordinating ability of organo-phosphorus/arsenic acids will be harnessed to support a series of metallic clusters that will be exploited for their use as magnetic materials in gas storage and as catalysts. The novel acids will be investigated for use as water soluble purification agents for, for example, mercury, uranium and lead.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100199	Dr Martin J Steinbauer	
Approved Project Title	Psyllids as biosecurity threats to plantation and native eucalypts in Australia and internationally	
2010		\$87,567.00
2011		\$175,048.00
2012		\$169,896.50
2013		\$166,010.00
2014		\$83,594.50
Primary FoR	0608	ZOOLOGY

FT1 Dr Martin J Steinbauer
Administering Organisation La Trobe University

Project Summary

Psyllids are tiny cicada-like insects that are economic pests of forestry and horticulture because the saliva injected when feeding causes leaf death and some vector plant diseases. Advanced technologies and procedures will be used to determine what makes plants susceptible to psyllids and to improve Australian preparedness ahead of an incursion.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Macfarlane Burnet Institute for Medical Research and Public Health

FT100100321 A/Prof Paul M Dietze

Approved Project Title **Reducing the burden of alcohol and other drug use in Australia**

2010	\$100,868.00
2011	\$201,980.50
2012	\$202,619.00
2013	\$201,157.50
2014	\$99,651.00

Primary FoR 1117 PUBLIC HEALTH AND HEALTH SERVICES

FT2 A/Prof Paul M Dietze

Administering Organisation Macfarlane Burnet Institute for Medical Research and Public Health

Project Summary

The costs of alcohol and other drug use to the Australian community are significant. This research will aim to reduce this burden by developing the evidence for effective intervention and then working with policymakers and practitioners to improve responses to alcohol and other drugs in the community.

FT100100297 A/Prof Johnson Mak

Approved Project Title **The ins and outs of HIV biology**

2010	\$101,649.00
2011	\$203,298.00
2012	\$203,298.00
2013	\$203,298.00
2014	\$101,649.00

Primary FoR 0605 MICROBIOLOGY

FT2 A/Prof Johnson Mak

Administering Organisation Macfarlane Burnet Institute for Medical Research and Public Health

Project Summary

This project aims to delineate the fundamental mechanisms that regulate the production of HIV and the ability of HIV to cause AIDS in infected patients. It will utilise state-of-the-art technologies to unearth new clues that govern the biology of HIV, with the ultimate goal to develop novel vaccine and treatment strategies against HIV.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

Monash University

FT100100966 Dr Zane Andrews

Approved Project Title **How appetite-suppressing brain cells maintain normal function and prevent the development of obesity**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0606	PHYSIOLOGY

FT1 Dr Zane Andrews

Administering Organisation Monash University

Project Summary

The brain plays a critical role in body weight gain by balancing appetite-inducing and appetite-suppressing signals. An imbalance in this process causes obesity and promotes diabetes. The aim of this research is to identify how appetite-suppressing brain cells maintain normal function and prevent the development of obesity.

FT100100280 Dr Michael J Brown

Approved Project Title **The growth of galaxies: connecting stars, gas and dark matter**

2010		\$77,225.00
2011		\$147,269.00
2012		\$140,570.50
2013		\$140,570.50
2014		\$70,044.00
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT1 Dr Michael J Brown

Administering Organisation Monash University

Project Summary

Did galaxies, like our Milky Way, grow by forming new stars or did they acquire them by merging with other galaxies? Using major astronomical facilities, including the Australian Square Kilometre Array Pathfinder, the project will measure how galaxies grow over the eons within extended structures of dark matter.

FT100100392 Dr Megan E Cassidy-Welch

Approved Project Title **War and memory in European culture: a long perspective**

2010		\$74,304.50
2011		\$142,931.00
2012		\$136,687.00
2013		\$138,185.00
2014		\$70,124.50
Primary FoR	2103	HISTORICAL STUDIES

FT1 Dr Megan E Cassidy-Welch

Administering Organisation Monash University

Project Summary

This project provides a new account of the integration of the crusades into European cultural memory. As an innovative study of war it offers a long perspective on European history; as a study of religious warfare, it will enrich present-day debates on the consequences of international conflict.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100763 Dr Sandra K Floyd
Approved Project Title **Evolution of vascular tissue in land plants**

2010		\$86,344.00
2011		\$174,533.00
2012		\$175,303.00
2013		\$174,228.00
2014		\$87,114.00
Primary FoR	0603	EVOLUTIONARY BIOLOGY

FT1 Dr Sandra K Floyd
Administering Organisation Monash University

Project Summary

This project will investigate genetic mechanisms of secondary cell wall thickening in a new genetic model representing an ancient plant lineage. This research will reveal the evolutionary origin of plant vascular tissue; a significant innovation that allowed increased size of plants and the origin of wood.

FT100100163 A/Prof Anita L Harris
Approved Project Title **Young people and social inclusion in the multicultural city**

2010		\$100,686.50
2011		\$202,282.50
2012		\$192,739.00
2013		\$170,322.00
2014		\$79,179.00
Primary FoR	1608	SOCIOLOGY

FT2 A/Prof Anita L Harris
Administering Organisation Monash University

Project Summary

This project investigates the ways young people cultivate cohesion and inclusion in multicultural communities. It will provide insights into their civic practices to assist policy makers and service providers develop effective means to maximise social inclusion, civic participation and community cohesion in culturally diverse societies.

FT100100322 Dr Jakob Hohwy
Approved Project Title **The human mind in prediction: conceptual, experimental and practical implications of the theory that the brain is a hypothesis-tester**

2010		\$87,947.50
2011		\$176,085.00
2012		\$174,909.00
2013		\$174,237.00
2014		\$87,465.50
Primary FoR	2203	PHILOSOPHY

FT1 Dr Jakob Hohwy
Administering Organisation Monash University

Project Summary

The relation between the mind and the body is investigated through analysis and experimental studies of the idea that the human brain is essentially a hypothesis-tester. This could radically change our understanding of experience, self and belief, and has the potential to lead to clinical and technological discovery and innovation.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100002 Dr Jian Li
Approved Project Title **Targeting an impending global disaster: the mismatch between increasingly drug-resistant superbugs and development of new antibiotics**

2010		\$82,321.50
2011		\$166,873.50
2012		\$166,873.50
2013		\$166,873.50
2014		\$84,552.00
Primary FoR	1115	PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

FT1 Dr Jian Li
Administering Organisation Monash University

Project Summary

This project will develop much-needed novel antibiotics for treating infections caused by bacteria that are resistant to all current antibiotics. It will make a significant contribution to the global medical challenge of a shortage of new antibiotics.

FT100100305 Dr Maria A Lugaro
Approved Project Title **The origin of the elements heavier than iron**

2010		\$87,599.00
2011		\$154,951.00
2012		\$136,948.50
2013		\$137,833.00
2014		\$68,236.50
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT1 Dr Maria A Lugaro
Administering Organisation Monash University

Project Summary

This research investigates the cosmic origin of the elements heavier than iron, as they are produced by nuclear reactions inside stars. The study of these elements in stars and meteorites will help us to understand the origin and history of the Solar System, of old stars and of stellar clusters and galaxies.

FT100100064 Dr Jane Lydon
Approved Project Title **Recognising Aborigines: from objects of science to First Australians**

2010		\$74,386.00
2011		\$147,672.00
2012		\$151,294.50
2013		\$156,214.50
2014		\$78,206.00
Primary FoR	2103	HISTORICAL STUDIES

FT1 Dr Jane Lydon
Administering Organisation Monash University

Project Summary

Photographs of Aboriginal and Torres Strait Islander peoples have played a powerful but unexamined role in shaping global views of race and identity. Reversing the flow of this significant heritage resource from European collections to descendants will enhance international research collaborations and our understanding of current Indigenous issues.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100690 Dr Sheena McGowan
Approved Project Title **Structural and functional characterisation of compounds that inhibit the malarial aminopeptidases**

2010		\$85,819.00
2011		\$171,638.00
2012		\$171,638.00
2013		\$171,638.00
2014		\$85,819.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 Dr Sheena McGowan
Administering Organisation Monash University

Project Summary

Malaria is the world's most prevalent parasitic disease. Due to the rapid spread of drug resistant parasites there is a need to develop new antimalarial drugs. In this proposal we will characterise new targets and novel methods of inhibition that will form the basis of a new mechanism for antimalarial drugs.

FT100100275 Dr Christopher R McNeill
Approved Project Title **Nanostructuring and nanocharacterisation of organic semiconductor devices**

2010		\$88,229.00
2011		\$176,303.00
2012		\$172,898.00
2013		\$172,648.00
2014		\$87,824.00
Primary FoR	0912	MATERIALS ENGINEERING

FT1 Dr Christopher R McNeill
Administering Organisation Monash University

Project Summary

This research project will utilise new approaches to pattern organic solar cells on the nanoscale to realise improved efficiencies and improved understanding of device operation. It will also develop soft x-ray techniques to probe the nanostructure of organic semiconductor films with increased chemical and interfacial specificity.

FT100100548 A/Prof Sharon J Pickering
Approved Project Title **Policing the border: security, human rights and gender**

2010		\$109,586.00
2011		\$216,436.50
2012		\$214,584.50
2013		\$201,768.50
2014		\$94,034.50
Primary FoR	1602	CRIMINOLOGY

FT3 A/Prof Sharon J Pickering
Administering Organisation Monash University

Project Summary

Women are the fastest growing group undertaking extra-legal border crossing, yet we know little about the gendered character of border enforcement. This project will develop a regulatory framework for border policing that is adaptable to the gender determinants of mobility, human rights and the future challenges of border management.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100134 Prof Dr Zongping Shao
Approved Project Title **Highly efficient electric power and value-added synthesis gas co-generation from methane with zero greenhouse gas emission**

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	0904	CHEMICAL ENGINEERING

FT2 Prof Dr Zongping Shao
Administering Organisation Monash University

Project Summary

This project addresses a novel sealing-free solid oxide fuel cell system producing simultaneously synthesis gas and electricity from methane with zero greenhouse gas emission. The project aims to deliver economic benefits and contribute to environmental protection and increased employment opportunities.

FT100100620 Dr Ian M Smyth
Approved Project Title **Using mouse genetics to understand skin development and cell biology**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0604	GENETICS

FT1 Dr Ian M Smyth
Administering Organisation Monash University

Project Summary

During embryonic development the skin forms a protective barrier which permits life outside the womb and provides a window into the biology of cells. This project aims to use the skin to identify and characterise genes necessary for embryonic development and maintenance, the development of diseases and to explore their broader roles in other organs.

FT100100481 Dr Robert J Sparrow
Approved Project Title **A new ethics for the development and application of genetic technologies in a pluralist society**

2010		\$68,785.00
2011		\$138,719.00
2012		\$140,409.50
2013		\$141,815.50
2014		\$71,340.00
Primary FoR	2201	APPLIED ETHICS

FT1 Dr Robert J Sparrow
Administering Organisation Monash University

Project Summary

New technologies for prenatal testing and preimplantation genetic diagnosis will soon grant us an unprecedented power to choose our children's genes. This project will develop an ethical framework to govern the development and use of these technologies and thus help ensure that future Australians enjoy a healthy start to life.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100748 Dr Tianhai Tian
Approved Project Title **Stochastic modelling of genetic regulatory networks with burst process**

2010	\$92,728.00
2011	\$176,187.00
2012	\$168,128.00
2013	\$168,128.00
2014	\$83,459.00
Primary FoR	0104 STATISTICS

FT2 Dr Tianhai Tian
Administering Organisation Monash University

Project Summary

This project will develop the next generation of stochastic modelling to study the fundamental principles of genetic regulation. Simulations will yield deeper insight into the origin of bistability and oscillation in gene networks.

FT100100192 Prof Huanting Wang
Approved Project Title **Composite Membranes for Energy-efficient Separation Technologies**

2010	\$114,979.00
2011	\$229,958.00
2012	\$229,958.00
2013	\$229,958.00
2014	\$114,979.00
Primary FoR	0904 CHEMICAL ENGINEERING

FT3 Prof Huanting Wang
Administering Organisation Monash University

Project Summary

Advanced separation membranes play a crucial role in the development of clean energy and sustainable water technologies. In this project, new membranes will be developed to substantially improve separation efficiencies in these areas.

Murdoch Childrens Research Institute

FT100100750 Dr Craig A Smith
Approved Project Title **Understanding gonadal development and disease using a unique model system, the avian embryo.**

2010	\$91,449.00
2011	\$186,428.00
2012	\$188,628.00
2013	\$187,298.00
2014	\$93,649.00
Primary FoR	0604 GENETICS

FT2 Dr Craig A Smith
Administering Organisation Murdoch Childrens Research Institute

Project Summary

This project will provide information on normal and abnormal gonadal development during embryonic life. The study will aid in the diagnosis and management of humans born with disorders of sexual development and will be useful for sex ratio manipulation in the poultry industry.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

RMIT University

FT100100801 Dr Esther R Charlesworth

Approved Project Title **Architecture on the edge: designing sustainable housing systems for vulnerable communities**

2010		\$84,419.00
2011		\$165,738.00
2012		\$156,638.00
2013		\$138,638.00
2014		\$63,319.00
Primary FoR	1201	ARCHITECTURE

FT1 Dr Esther R Charlesworth

Administering Organisation RMIT University

Project Summary

The aim of the research is to analyse the disciplinary experiences of architects working on the design of housing across four vulnerable communities and to identify best practices within the profession that might enable architects to address a wider range of global problems including civil conflict, climate change and natural disasters.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

The University of Melbourne

FT100100144 A/Prof Timothy D Fletcher

Approved Project Title **Catchment-scale and riparian zone stormwater retention: can it restore stream hydrology?**

2010	\$101,646.50
2011	\$203,286.50
2012	\$203,275.00
2013	\$202,699.50
2014	\$101,064.50

Primary FoR 0406 PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE

FT2 A/Prof Timothy D Fletcher

Administering Organisation The University of Melbourne

Project Summary

This project will test whether or not stormwater retention systems dispersed throughout a catchment can restore pre-development streamflows in peri-urban streams. It will provide a new model for the design of stormwater drainage systems which both protect aquatic ecosystems and reduce the demand for imported water in cities.

FT100100494 Dr Timothy M Garoni

Approved Project Title **Design, analysis and application of Monte Carlo methods in statistical mechanics**

2010	\$69,650.50
2011	\$138,800.50
2012	\$139,511.00
2013	\$139,511.00
2014	\$69,150.00

Primary FoR 0105 MATHEMATICAL PHYSICS

FT1 Dr Timothy M Garoni

Administering Organisation The University of Melbourne

Project Summary

Statistical mechanics is a general framework for studying complex systems and Monte Carlo methods are an important computational tool in such studies. This project will develop new, vastly more efficient, Monte Carlo methods for problems in statistical mechanics, and will apply these methods to real-world problems such as urban traffic flow.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100560 A/Prof Andrew F Hill
Approved Project Title **Investigating the intercellular trafficking of proteins and RNA and its relevance to neurodegenerative diseases**

2010		\$114,844.00
2011		\$229,783.00
2012		\$229,713.00
2013		\$229,618.00
2014		\$114,844.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT3 A/Prof Andrew F Hill
Administering Organisation The University of Melbourne

Project Summary

Alzheimer's and prion diseases are neurodegenerative disorders associated with protein misfolding. This project brings together similar features of these diseases using novel cell- and animal-based studies to develop a greater understanding of the molecular basis of these disorders.

FT100100203 Dr Amy S Jordan
Approved Project Title **Assessing a model of the physiological changes at arousal from sleep**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	1102	CARDIOVASCULAR MEDICINE AND HAEMATOLOGY

FT1 Dr Amy S Jordan
Administering Organisation The University of Melbourne

Project Summary

Arousals from sleep are common in the elderly and have adverse consequences. This project will investigate a model of the changes in bodily processes (muscle, brain and cardiovascular activation) that occur when humans awaken from sleep.

FT100100349 Dr Michael R Kearney
Approved Project Title **An integrated mechanistic model of species' responses to environmental change: from individual responses to range shifts and beyond**

2010		\$85,375.50
2011		\$158,879.50
2012		\$142,073.00
2013		\$144,953.00
2014		\$76,384.00
Primary FoR	0501	ECOLOGICAL APPLICATIONS

FT1 Dr Michael R Kearney
Administering Organisation The University of Melbourne

Project Summary

To effectively adapt to future environmental change, reliable forecasts are needed of how human alterations to climate and habitat will affect species. This project integrates cutting-edge methods in nutritional, physiological and spatial ecology to develop new tools for predicting and understanding how species will respond to environmental change.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100952 A/Prof Tomasz S Kowalski
Approved Project Title **Quasi-subtractive varieties: a unified framework for substructural, modal and quantum logic**

2010	\$80,989.00
2011	\$162,243.00
2012	\$163,803.00
2013	\$162,798.00
2014	\$80,249.00
Primary FoR	0101 PURE MATHEMATICS

FT2 A/Prof Tomasz S Kowalski
Administering Organisation The University of Melbourne

Project Summary

An algebraic theory is proposed that provides a common umbrella for a plethora of non-classical logics. At the same time, it identifies a core that these logics share with classical algebras.

FT100100762 Dr Helen MacDonald
Approved Project Title **Spare parts: the cultural history of organ transplantation**

2010	\$77,685.50
2011	\$147,126.50
2012	\$140,932.00
2013	\$142,382.50
2014	\$70,891.50
Primary FoR	2103 HISTORICAL STUDIES

FT1 Dr Helen MacDonald
Administering Organisation The University of Melbourne

Project Summary

Organ transplantation is of considerable contemporary concern to Australians. Despite decades of campaigns seeking organ donors, this country has one of the world's lowest donation rates. This study will explore how this situation arose and offer a new understanding of the factors that impinge upon people's perceptions of transplantation.

FT100100538 Dr Chris Manzie
Approved Project Title **Low emission road transportation: harnessing the potential of alternative fuels and advanced vehicle technologies through online optimisation**

2010	\$87,734.00
2011	\$175,203.00
2012	\$174,942.00
2013	\$175,092.00
2014	\$87,619.00
Primary FoR	0902 AUTOMOTIVE ENGINEERING

FT1 Dr Chris Manzie
Administering Organisation The University of Melbourne

Project Summary

This project will develop fundamental mathematical theory and use it to enable the best possible CO2 reduction capability in road vehicles. The cost of different technologies and fuels will then be compared to determine the most cost effective approaches to reduce road transport emissions.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100923	Dr Michael A McCarthy	
Approved Project Title	Resource allocation for efficient environmental management	
2010		\$104,589.50
2011		\$199,621.00
2012		\$198,360.50
2013		\$198,860.50
2014		\$95,531.50
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

FT3 Dr Michael A McCarthy
Administering Organisation The University of Melbourne

Project Summary

The world faces a range of pressing environmental problems such as loss of biodiversity, invasion of pests and weeds, high greenhouse gas emissions and emerging infectious diseases. This research will show how to manage environmental problems most efficiently, especially when the state of the world and the benefits of management are uncertain.

FT100100072	Dr Nathalie H Nguyen	
Approved Project Title	Forgotten histories: Vietnamese veterans in Australia	

2010		\$90,534.00
2011		\$182,215.00
2012		\$180,247.50
2013		\$170,934.50
2014		\$82,368.00
Primary FoR	2103	HISTORICAL STUDIES

FT2 Dr Nathalie H Nguyen
Administering Organisation The University of Melbourne

Project Summary

Australia's participation in the Vietnam War left a lasting impact on national consciousness. The Vietnamese community in Australia is a legacy of that war and its aftermath. By focusing on Vietnamese veterans, this study will add vital new insights into Australian war and immigration history and enhance cultural understanding.

FT100100774	Dr Jorgen Rasmussen	
Approved Project Title	Representation theory of diagram algebras and logarithmic conformal field theory	

2010		\$88,358.50
2011		\$173,267.50
2012		\$172,317.00
2013		\$168,187.00
2014		\$80,779.00
Primary FoR	0105	MATHEMATICAL PHYSICS

FT2 Dr Jorgen Rasmussen
Administering Organisation The University of Melbourne

Project Summary

Generalized models of polymers and percolation are notoriously difficult to handle mathematically, but can be described and solved using diagram algebras and logarithmic conformal field theory. Potential applications include polymer-like materials, filtering of drinking water, spatial spread of epidemics and bushfires, and tertiary recovery of oil.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100689 Dr Elizabeth L Scarr
Approved Project Title **Understanding the changes in brain chemistry associated with schizophrenia**

2010		\$99,474.00
2011		\$199,385.50
2012		\$199,720.50
2013		\$199,718.00
2014		\$99,909.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT2 Dr Elizabeth L Scarr
Administering Organisation The University of Melbourne

Project Summary

Current drugs for schizophrenia only work in 30% of patients. To develop better therapies, we must understand the changes in the brains of people with the disorder. This research will explore a chemical system in the brain that is changed in schizophrenia and begin to investigate whether counteracting these changes are therapeutically beneficial.

FT100100324 A/Prof William Shieh
Approved Project Title **Ultrahigh-speed optical transport for sustaining the internet growth**

2010		\$100,549.00
2011		\$202,098.00
2012		\$202,598.00
2013		\$202,598.00
2014		\$101,549.00
Primary FoR	1005	COMMUNICATIONS TECHNOLOGIES

FT2 A/Prof William Shieh
Administering Organisation The University of Melbourne

Project Summary

Our society has entered an information era centred around the Internet. This project aims to study novel transport technologies to construct optical backbone networks supporting the Internet traffic. The project will keep Australia at the leading edge of exciting Terabit technologies as well as create commercial opportunities in Australia.

FT100100307 Dr Craig C Westerland
Approved Project Title **Topology through applications: geometry, number theory and physics**

2010		\$70,109.00
2011		\$139,218.00
2012		\$138,218.00
2013		\$138,218.00
2014		\$69,109.00
Primary FoR	0101	PURE MATHEMATICS

FT1 Dr Craig C Westerland
Administering Organisation The University of Melbourne

Project Summary

Topology is the part of geometry that remains invariant under deformation (as in the inflation of a balloon). We will apply this flexibility to investigate deep problems in several disciplines as diverse as number theory, geometry and the mathematics of string theory.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100674 Dr Anthony R White
Approved Project Title **Investigating the neuroprotective actions of metallo-complexes**

2010		\$101,585.50
2011		\$202,612.50
2012		\$202,284.00
2013		\$201,784.00
2014		\$100,527.00
Primary FoR	1109	NEUROSCIENCES

FT2 Dr Anthony R White
Administering Organisation The University of Melbourne

Project Summary

Metal-based drugs offer an exciting new approach to treatment of neurodegeneration. However, little is known about how cells metabolise these drugs: information that is critical for further drug development. This project will determine how metal-based drugs are metabolized by neuronal cells and how this may result in therapeutic benefit.

FT100100819 Dr Brendan A Wintle
Approved Project Title **From prediction to adaptation: responding to rapid ecosystem shifts under climate change**

2010		\$80,660.50
2011		\$156,579.50
2012		\$143,038.00
2013		\$140,588.00
2014		\$73,469.00
Primary FoR	0501	ECOLOGICAL APPLICATIONS

FT1 Dr Brendan A Wintle
Administering Organisation The University of Melbourne

Project Summary

Nobody knows exactly how climate change will affect the ecosystems on which we depend for our own existence, though negative impacts are widely predicted. This project integrates mathematical, economic and ecological approaches to learn about the most effective way to spend limited funds for sustaining ecosystems threatened by climate change.

FT100100759 Dr Elaine Wong
Approved Project Title **Energy-efficient storage and delivery solutions for video-rich services over next-generation broadband access networks**

2010		\$88,284.00
2011		\$176,590.50
2012		\$176,613.00
2013		\$176,385.50
2014		\$88,079.00
Primary FoR	1005	COMMUNICATIONS TECHNOLOGIES

FT1 Dr Elaine Wong
Administering Organisation The University of Melbourne

Project Summary

This project harnesses sustainable technologies to develop a design framework for energy-efficient broadband infrastructures. Key outcomes will contribute towards lowering the energy footprint of future broadband deployments, creating business opportunities in this emerging market and informing policy makers of sustainable strategies.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Walter and Eliza Hall Institute of Medical Research

FT100100764 Dr Melanie Bahlo

Approved Project Title **Developing methods for the analysis of massively parallel sequencing data in family studies**

2010	\$87,634.00
2011	\$174,903.00
2012	\$174,853.00
2013	\$174,853.00
2014	\$87,269.00
Primary FoR	0604 GENETICS

FT1 Dr Melanie Bahlo

Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

This project will develop analytical methods to use the latest, high-throughput method of generating sequencing data, i.e. the letters of the human genome alphabet. These tools will be used to identify the causal mutations in families with inherited disorders, leading to diagnostic tests for these families.

FT100100112 Dr Jacob Baum

Approved Project Title **Molecular dissection of malaria parasite motility and host-cell invasion across the lifecycle**

2010	\$88,319.00
2011	\$176,638.00
2012	\$176,638.00
2013	\$176,638.00
2014	\$88,319.00
Primary FoR	1108 MEDICAL MICROBIOLOGY

FT1 Dr Jacob Baum

Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

Malaria parasites move in a unique way, gliding across cell surfaces and infecting host cells using a unique molecular motor. This research aims to understand the molecular mechanics behind parasite movement and use this to develop novel drugs that might throw a spanner in the parasite motor, blocking movement and thereby preventing malaria disease.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100791 Dr Grant Dewson
Approved Project Title **Controlling apoptotic cell death in health and disease**

2010		\$88,069.00
2011		\$176,388.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 Dr Grant Dewson
Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

Regulating how and when cells die is crucial for the development and maintenance of a healthy body and mind. This project will investigate the proteins that are responsible for controlling cell death with the view to identifying novel ways to target these proteins for the treatment of disorders such as cancer, neurodegenerative disease and autoimmunity.

FT100100754 Dr Ruth M Kluck
Approved Project Title **Dissecting the mitochondrial pathway of apoptotic cell death**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 Dr Ruth M Kluck
Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

This research aims to identify each step in cell death regulation by the Bcl-2 family of proteins. Each step is a potential target for drugs that may help cancer cells die, or that may help normal cells such as heart and brain cells recover from damage.

FT100100100 Dr James M Murphy
Approved Project Title **The discovery and characterisation of novel protein regulators of blood cell formation**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 Dr James M Murphy
Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

All of the mature blood cells in the human body are derived from a common ancestor cell type known as a stem cell. Our proposed studies will enhance our knowledge of how functional, mature blood cells are formed from stem cells and how dysregulation of these normally tightly controlled pathways can give rise to severe blood diseases.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100524	Dr Stephen Nutt	
Approved Project Title	Genetic networks controlling lymphocyte differentiation	
2010		\$114,979.00
2011		\$229,958.00
2012		\$229,958.00
2013		\$229,958.00
2014		\$114,979.00
Primary FoR	0699	OTHER BIOLOGICAL SCIENCES

FT3 Dr Stephen Nutt
Administering Organisation Walter and Eliza Hall Institute of Medical Research

Project Summary

White blood cells are produced in the bone marrow from a rare stem cell. This research aims to understand how a handful of master-regulator genes act in the stem cells to produce the white blood cells that are required for our immune response to microbes, vaccination and to prevent cancer.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Queensland

Australian Institute of Marine Science

FT100101004 Dr Michelle R Heupel

Approved Project Title **Changing ocean temperatures and movements of marine predators: the performance of marine protected areas in a warming ocean**

2010		\$86,819.00
2011		\$172,738.00
2012		\$171,838.00
2013		\$171,838.00
2014		\$85,919.00
Primary FoR	0501	ECOLOGICAL APPLICATIONS

FT1 Dr Michelle R Heupel

Administering Organisation Australian Institute of Marine Science

Project Summary

Large predatory fish are essential to a balanced ecosystem and require protection from overfishing. Understanding what conditions cause them to migrate outside their normal home ranges will enable marine park managers to better design protection zones, both now and under future climate scenarios.

FT100100088 Dr Madeleine J van Oppen

Approved Project Title **Coral-associated viruses: pathogens, mutualists and agents of evolution?**

2010		\$114,979.00
2011		\$229,847.00
2012		\$227,347.00
2013		\$215,404.50
2014		\$102,925.50
Primary FoR	0605	MICROBIOLOGY

FT3 Dr Madeleine J van Oppen

Administering Organisation Australian Institute of Marine Science

Project Summary

Corals host numerous organisms, of which viruses are the least studied. The aim of this project is to characterise the viruses associated with corals and to obtain a detailed understanding of the critical roles that viruses play in coral health, coral bleaching and adaptation of corals to climate change.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Griffith University

FT100100143 Prof Stephen R Billett

Approved Project Title **Enhancing practice-based learning experiences: towards a curriculum, pedagogy and epistemology of practice**

2010		\$99,609.50
2011		\$195,845.50
2012		\$208,063.50
2013		\$202,921.50
2014		\$91,094.00
Primary FoR	1301	EDUCATION SYSTEMS

FT3 Prof Stephen R Billett

Administering Organisation Griffith University

Project Summary

Workplaces are increasingly seen as essential sites for learning about occupations and continuing to be competent across working lives. Focussing on healthcare work, this project seeks to maximise and improve learning experiences in workplaces and integrate them effectively into educational programs to improve occupational competence.

FT100100278 Dr Jay M Gambetta

Approved Project Title **Designing and controlling superconducting circuits for quantum information processing**

2010		\$78,319.00
2011		\$150,107.50
2012		\$145,052.50
2013		\$145,052.50
2014		\$71,788.50
Primary FoR	0204	CONDENSED MATTER PHYSICS

FT1 Dr Jay M Gambetta

Administering Organisation Griffith University

Project Summary

Superconducting circuits are the quantum version of the standard electric circuits and, as the electric circuit did for the electronics industry, they promise a revolution for quantum technologies. This project aims to design superconducting circuits that are more robust to noise and useful for quantum information processing.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100364 A/Prof Regina J Ganter
Approved Project Title **German-speakers in the Australian indigenous encounter: ethnographers, collectors, missionaries**

2010		\$89,989.50
2011		\$173,561.50
2012		\$171,417.50
2013		\$168,141.50
2014		\$80,296.00
Primary FoR	2103	HISTORICAL STUDIES

FT2 A/Prof Regina J Ganter
Administering Organisation Griffith University

Project Summary

This project will generate a website and accompanying scholarly book to provide easy access to otherwise intractable sources show-casing the vast contribution of German speakers to the mission and ethnographic effort in the Australian colonies. These will be useful resources for history teaching and a contribution to intercultural understanding.

FT100100695 Dr Jason N Peart
Approved Project Title **Stress-sensing and cytoprotection in ageing and disease**

2010		\$88,314.00
2011		\$176,628.00
2012		\$176,628.00
2013		\$176,628.00
2014		\$88,314.00
Primary FoR	1102	CARDIOVASCULAR MEDICINE AND HAEMATOLOGY

FT1 Dr Jason N Peart
Administering Organisation Griffith University

Project Summary

This project aims to unravel the mechanisms responsible for age- and disease-related responses to heart attacks and the efficacy of therapeutic approaches, while deepening our understanding of a novel, potent protective modality effective in aged hearts. This program will provide valuable basic knowledge, leading to more efficacious therapies.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100833 Dr Wesley W Widmaier
Approved Project Title **Constructing the next crisis: ideas, economic policy, and the social limits to reform**

2010		\$70,381.00
2011		\$141,689.00
2012		\$144,027.50
2013		\$140,862.50
2014		\$68,143.00
Primary FoR	1606	POLITICAL SCIENCE

FT1 Dr Wesley W Widmaier
Administering Organisation Griffith University

Project Summary

For twenty years, even as the world economy has been repeatedly disrupted by crises, efforts at reform have been blocked by economic ideas regarding the virtues of free markets. If these views remain in place, there will be more crises. This research seeks to understand how elite consensus limits debate and how new ideas might enable reform.

FT100100344 Prof Guangshan Zhu
Approved Project Title **Targeted synthesis of porous materials towards gas sorption and separation**

2010		\$101,649.00
2011		\$203,298.00
2012		\$201,048.00
2013		\$197,548.00
2014		\$98,149.00
Primary FoR	0303	MACROMOLECULAR AND MATERIALS CHEMISTRY

FT2 Prof Guangshan Zhu
Administering Organisation Griffith University

Project Summary

Targeted synthesis, using a building block strategy and computational design, is an efficient method for controlled synthesis of porous materials. This project uses this method to synthesise porous materials with permanent functional pores for separating and storing fuels and greenhouse gases, addressing demanding energy and environmental problems.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

James Cook University

FT100100375	Dr Lee Berger	
Approved Project Title	Emergence and evolution of a multi-host pandemic: amphibian chytridiomycosis as a model	
2010		\$88,119.00
2011		\$176,438.00
2012		\$176,548.00
2013		\$176,478.00
2014		\$88,249.00
Primary FoR	0707	VETERINARY SCIENCES

FT1 Dr Lee Berger
Administering Organisation James Cook University

Project Summary

Emerging infectious diseases are contributing to the sixth mass extinction. This study will focus on the most important disease, chytridiomycosis, which has caused the extinction of hundreds of amphibian species. It will examine the reasons for its emergence and how it is evolving - this will improve management of it and other emerging diseases.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

Queensland Institute of Medical Research

FT100100333 Dr Suyinn Chong

Approved Project Title **Epigenetic and neurobehavioural changes in a new mouse model of foetal alcohol spectrum disorders**

2010	\$88,119.00
2011	\$176,223.00
2012	\$175,023.00
2013	\$174,698.00
2014	\$87,779.00
Primary FoR	0604 GENETICS

FT1 Dr Suyinn Chong

Administering Organisation Queensland Institute of Medical Research

Project Summary

Foetal alcohol syndrome involves changes in growth, skull structure, central nervous system defects and intellectual disabilities. This project will use a mouse model to study the underlying causes of this disorder, focussing on brain structure and function, and aim to identify markers that can be used for early diagnosis and treatment.

FT100100511 Dr Patricia C Valery

Approved Project Title **Developing an evidence base to improve the health of Aboriginal and Torres Strait Islander people**

2010	\$74,319.00
2011	\$144,638.00
2012	\$139,938.00
2013	\$139,538.00
2014	\$69,919.00
Primary FoR	1117 PUBLIC HEALTH AND HEALTH SERVICES

FT1 Dr Patricia C Valery

Administering Organisation Queensland Institute of Medical Research

Project Summary

This project addresses two critical health needs for Indigenous Australians, namely cancer and infectious diseases. It will test interventions in each area with the aim of improving health outcomes.

Queensland University of Technology

FT100100172 Dr Yuantong Gu

Approved Project Title **Innovative multiscale modelling to explore mechanical properties of single living cells**

2010	\$88,052.00
2011	\$173,371.00
2012	\$172,196.00
2013	\$172,821.00
2014	\$85,944.00
Primary FoR	0913 MECHANICAL ENGINEERING

FT1 Dr Yuantong Gu

Administering Organisation Queensland University of Technology

Project Summary

This project will develop a new modelling platform to explore the relationship between living cell mechanical properties, their response to mechanical loads and their biological functions. Providing knowledge beyond current experimental measurements, this model will support studies into new treatments and preventions for diseases.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

The University of Queensland

FT100100469 Prof Dr Nicholas T Aroney

Approved Project Title **Reconceiving Australian federalism: fundamental values, comparative models and constitutional interpretation**

2010	\$110,014.00
2011	\$223,119.00
2012	\$222,806.50
2013	\$216,474.50
2014	\$106,773.00
Primary FoR	1801 LAW

FT3 Prof Dr Nicholas T Aroney

Administering Organisation The University of Queensland

Project Summary

Through systematic comparison with other federal systems, this project identifies the range of fundamental principles and values that could underlie the Australian system of government, explores their application to the interpretation of the Australian Constitution and scrutinises proposed reforms to the Australian system on the basis of that analysis.

FT100100427 Dr Thiruma V Arumugam

Approved Project Title **Novel pharmacological agents to target stroke-induced brain injury**

2010	\$88,319.00
2011	\$176,638.00
2012	\$176,638.00
2013	\$176,638.00
2014	\$88,319.00
Primary FoR	1115 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

FT1 Dr Thiruma V Arumugam

Administering Organisation The University of Queensland

Project Summary

There is a looming stroke epidemic in Australia. 72% of Australian stroke sufferers are over the age of 65 and whereas in 1997 only 12% of Australians were in that age group, by 2030 that number will have increased to 23%. There is an urgent need for novel therapies. This project will aid the development of a novel anti-stroke therapy.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

FT100100022 Dr Felicity Baker
Approved Project Title **What's in the music? A lifespan model of emotional and musical creativity in therapeutic song writing**

2010	\$88,299.50
2011	\$172,014.50
2012	\$154,220.00
2013	\$138,698.50
2014	\$68,193.50

Primary FoR 1904 PERFORMING ARTS AND CREATIVE WRITING

FT1 Dr Felicity Baker
Administering Organisation The University of Queensland

Project Summary

Composing songs as a form of therapy is a recent innovation in music therapy practice. This study examines the health benefits of original song writing for people with varying debilitating health conditions and those adjusting to injury, trauma or pending death. The results of this study will improve health service and delivery by music therapists.

FT100100377 Dr Sureshkumar Balasubramanian
Approved Project Title **Genomics of temperature response in plants**

2010	\$88,319.00
2011	\$175,700.50
2012	\$174,763.00
2013	\$174,763.00
2014	\$87,381.50

Primary FoR 0607 PLANT BIOLOGY

FT1 Dr Sureshkumar Balasubramanian
Administering Organisation The University of Queensland

Project Summary

Climate change is predicted to have negative impacts on Australian agriculture. This project will use genomic tools to uncover biological mechanisms for plant response to temperature that will help design crop varieties that are more tolerant to higher temperatures.

FT100100806 A/Prof Christine A Beveridge
Approved Project Title **Strigolactone, a new plant hormone: its regulation, role and potential for plant improvement.**

2010	\$87,899.00
2011	\$189,273.00
2012	\$202,873.00
2013	\$198,073.00
2014	\$96,574.00

Primary FoR 0607 PLANT BIOLOGY

FT2 A/Prof Christine A Beveridge
Administering Organisation The University of Queensland

Project Summary

This Project will investigate a new plant hormone, one of only 10 or so discovered to date in plants. This hormone regulates shoot number, water and nutrient uptake and the ability of shoots to generate roots and develop wood. The Project will produce genetic tools and describe new processes for applications in sustainable plant improvement.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100721 Dr Idriss Blakey
Approved Project Title **Smart magnetic resonance imaging (MRI) contrast agents: from early detection to assessment of drug delivery mechanisms**

2010		\$88,008.50
2011		\$176,234.00
2012		\$176,527.50
2013		\$176,599.50
2014		\$88,297.50
Primary FoR	0303	MACROMOLECULAR AND MATERIALS CHEMISTRY

FT1 Dr Idriss Blakey
Administering Organisation The University of Queensland

Project Summary

'Smart' contrast agents will be developed for enhancing the performance of magnetic resonance imaging (MRI) of diseases such as cancer by designing them to be triggered by biochemical markers for disease. This has the potential to aid in early detection which can lead to lower mortality rates and consequently a lower burden on the health system.

FT100100905 A/Prof Michael W Bromley
Approved Project Title **A study of ultracold atom interferometry and interactions through high-performance computing**

2010		\$86,319.00
2011		\$174,638.00
2012		\$174,638.00
2013		\$159,138.00
2014		\$72,819.00
Primary FoR	0206	QUANTUM PHYSICS

FT1 A/Prof Michael W Bromley
Administering Organisation The University of Queensland

Project Summary

This project involves a design and study of hyper-sensitive machines to detect changes in motion based on using clouds of atoms near absolute zero temperature. Matter at these ultracold temperatures can be harnessed to detect variations of both space and time, enabling novel quantum measurement devices to be built.

FT100100294 Dr Alexander F Broom
Approved Project Title **The changing landscapes of medical pluralism: a sociological analysis of patient experiences and decision making in Australia, India and Brazil**

2010		\$86,629.00
2011		\$155,036.00
2012		\$154,776.00
2013		\$173,188.00
2014		\$86,819.00
Primary FoR	1608	SOCIOLOGY

FT1 Dr Alexander F Broom
Administering Organisation The University of Queensland

Project Summary

This project examines the respective roles of biomedicine and traditional, complementary and alternative medicine in supporting health needs in Australia, Brazil and India. It will be the first sociological study to compare how different countries balance biomedical approaches to health with more alternative approaches.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100129 Dr Lynda A Cheshire
Approved Project Title **Transforming the outer suburbs through master planned estates: a governmental challenge**

2010		\$68,680.50
2011		\$156,496.50
2012		\$162,380.00
2013		\$141,612.50
2014		\$67,048.50
Primary FoR	1604	HUMAN GEOGRAPHY

FT1 Dr Lynda A Cheshire
Administering Organisation The University of Queensland

Project Summary

Master planned estates are becoming more common on the outer suburbs of capital cities and the developers of these estates are required to plan and manage a whole range of services. This project examines the role that private actors play in 'governing' suburban estates alongside traditional forms of government and the challenges that ensue.

FT100100476 Dr Richard J Clark
Approved Project Title **Development of effective peptide-based drugs**

2010		\$87,969.00
2011		\$176,228.00
2012		\$176,308.00
2013		\$176,308.00
2014		\$88,259.00
Primary FoR	0304	MEDICINAL AND BIOMOLECULAR CHEMISTRY

FT1 Dr Richard J Clark
Administering Organisation The University of Queensland

Project Summary

There is huge interest in the development of bioactive peptides and proteins for the treatment of a wide range of diseases. The aim of this research project is to develop potent and effective peptide-based drugs that are able to resist the body's natural degradation pathways so that they can reach their biological target and act as effective drugs.

FT100100027 Dr Brett M Collins
Approved Project Title **Defining the molecular mechanisms of intracellular protein trafficking**

2010		\$88,319.00
2011		\$168,283.00
2012		\$158,433.00
2013		\$155,233.00
2014		\$76,764.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 Dr Brett M Collins
Administering Organisation The University of Queensland

Project Summary

Intracellular trafficking of proteins is critical for normal cell function and defects can lead to many different human diseases. Outcomes from this project will lead to insights into how trafficking is regulated at the atomic level and will help place Australia at the forefront of international efforts to understand this essential process.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100976 A/Prof David A Copland
Approved Project Title **Optimising how the brain processes language in healthy and neurological populations**

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	1103	CLINICAL SCIENCES

FT2 A/Prof David A Copland
Administering Organisation The University of Queensland

Project Summary

This research will examine how the ability of the brain to process language can be modified by behavioural experiences, certain drugs and direct brain stimulation. The findings have the potential to reveal new ways to treat language disorders after brain injury or disease.

FT100100595 Dr Tamara M Davis
Approved Project Title **Dark matter, dark energy, and dark flow: galaxy motion reveals fundamental physics**

2010		\$75,508.00
2011		\$150,323.50
2012		\$147,107.00
2013		\$142,563.00
2014		\$70,271.50
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT1 Dr Tamara M Davis
Administering Organisation The University of Queensland

Project Summary

The twin mysteries of dark matter and dark energy present a profound challenge to modern physics. Capitalising on new Australian technology to measure the motion of tens of thousands of galaxies, we will detect unseen matter by its gravitational influence and thus illuminate the nature of the dark components of the universe.

FT100100137 Dr Aijun Du
Approved Project Title **Electronic functionality in nanoscale materials: from discovery to design**

2010		\$77,509.00
2011		\$158,603.00
2012		\$163,603.00
2013		\$155,253.00
2014		\$72,744.00
Primary FoR	0204	CONDENSED MATTER PHYSICS

FT1 Dr Aijun Du
Administering Organisation The University of Queensland

Project Summary

This project will develop innovative multifunctional carbon/boron-nitride nanomaterials by devising new strategies to manipulate their electronic functionality. Outcomes will include technological breakthroughs leading to smart materials for energy storage, greenhouse gas emission reduction and nanoelectronics.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100113 Dr Bryan G Fry
Approved Project Title **Adaptive evolution of coleoid (cuttlefish, octopus, squid) venoms**

2010	\$99,477.00
2011	\$199,304.00
2012	\$199,654.00
2013	\$196,376.00
2014	\$96,549.00
Primary FoR	0604 GENETICS

FT2 Dr Bryan G Fry
Administering Organisation The University of Queensland

Project Summary

This project represents an opportunity for biodiscovery from the venoms of cuttlefish, octopuses and squids. The independent adaptation for venom active at the subzero Arctic and Antarctic polar waters is of particular evolutionary interest. However, their divergent, bioactive compounds are also a rich drug design resource.

FT100100165 Dr Benjamin M Hogan
Approved Project Title **Genetic analysis of lymphatic vascular development**

2010	\$87,601.50
2011	\$175,203.00
2012	\$175,203.00
2013	\$175,203.00
2014	\$87,601.50
Primary FoR	0604 GENETICS

FT1 Dr Benjamin M Hogan
Administering Organisation The University of Queensland

Project Summary

This project investigates the fundamental molecular components that regulate lymphatic vascular system development in the zebrafish embryo. Lymphatic vessels play critical roles in vascular diseases and cancer metastasis. This study will identify and examine key new molecules that will further our basic understanding of lymphatic development.

FT100100688 Dr Amanda M Keddie
Approved Project Title **Socially just schooling: a cross-cultural analysis of gender, cultural diversity and social change within Australia and the UK**

2010	\$85,701.50
2011	\$170,648.50
2012	\$171,298.50
2013	\$169,044.50
2014	\$82,693.00
Primary FoR	1699 OTHER STUDIES IN HUMAN SOCIETY

FT1 Dr Amanda M Keddie
Administering Organisation The University of Queensland

Project Summary

The study will examine issues of gender justice, cultural diversity and schooling. Through cross-cultural insight developed from analysis of schools in Australia and the UK, the study will enhance policy and practice associated with socially just schooling.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100285 Dr Karen V Kheruntsyan
Approved Project Title **Fundamental tests of quantum mechanics with ultracold atomic gases**

2010	\$100,049.00
2011	\$199,648.00
2012	\$194,848.00
2013	\$195,948.00
2014	\$100,699.00

Primary FoR 0206 QUANTUM PHYSICS

FT2 Dr Karen V Kheruntsyan
Administering Organisation The University of Queensland

Project Summary

The project seeks to make a breakthrough in our understanding of quantum 'entanglement' in large-scale systems of massive particles. Such systems can revolutionise precision measurement and lead to new quantum devices for gravitational and inertial sensing. The project will help position Australia among the world leaders in these developments.

FT100100654 Dr Dustin J Marshall
Approved Project Title **Understanding and predicting invasion in the sea: a mechanistic approach**

2010	\$87,680.50
2011	\$175,479.50
2012	\$173,396.00
2013	\$172,306.00
2014	\$86,709.00

Primary FoR 0501 ECOLOGICAL APPLICATIONS

FT1 Dr Dustin J Marshall
Administering Organisation The University of Queensland

Project Summary

Marine invasive species cost millions of dollars each year. This project aims to determine how and why invasive species outcompete native species around much of the coast of Australia. Identifying the conditions that help invasive species outcompete native species will help managers reduce the spread and impact of marine invasive species.

FT100100338 A/Prof Clive A McAlpine
Approved Project Title **Modelling the potential of large-scale revegetation to reduce the impacts of climate change in semi-arid Australia**

2010	\$101,649.00
2011	\$203,298.00
2012	\$203,298.00
2013	\$203,298.00
2014	\$101,649.00

Primary FoR 0501 ECOLOGICAL APPLICATIONS

FT2 A/Prof Clive A McAlpine
Administering Organisation The University of Queensland

Project Summary

This project will contribute to Australia's capacity to respond to climate change and to the ecologically sustainable management of our natural resources. It will provide a comprehensive understanding of the potential of large-scale revegetation to moderate climate change, and to identify limitations to adaptation.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100795 Dr Evan G Moore
Approved Project Title **Caged lanthanides for use in photo-dynamic therapy and near infra-red imaging**

2010		\$88,069.00
2011		\$173,888.00
2012		\$173,638.00
2013		\$175,888.00
2014		\$88,069.00
Primary FoR	1112	ONCOLOGY AND CARCINOGENESIS

FT1 Dr Evan G Moore
Administering Organisation The University of Queensland

Project Summary

The early detection and effective treatment of cancer are two critical factors which determine survivability. This project will provide improved drugs for photo-dynamic therapy and develop emissive probes for near infra-red imaging to allow better discrimination between healthy and diseased tissue and improve subsequent treatment.

FT100100708 Dr Celine V Nauges
Approved Project Title **Informing economic policies to enhance an efficient and sustainable use of water resources in a context of high uncertainty on future climate**

2010		\$97,029.00
2011		\$180,808.00
2012		\$173,808.00
2013		\$171,828.00
2014		\$81,799.00
Primary FoR	1402	APPLIED ECONOMICS

FT2 Dr Celine V Nauges
Administering Organisation The University of Queensland

Project Summary

The main purpose of this project is to assess how economic instruments can be used to improve water resources management in a context of uncertainty and climate change.

FT100100515 Dr Murray K Olsen
Approved Project Title **Manufacturing, controlling, manipulating and measuring continuous-variable quantum entanglement**

2010		\$72,779.00
2011		\$143,558.00
2012		\$144,198.00
2013		\$144,338.00
2014		\$70,919.00
Primary FoR	0206	QUANTUM PHYSICS

FT1 Dr Murray K Olsen
Administering Organisation The University of Queensland

Project Summary

Quantum entanglement is a feature of the quantum world which results in objects, which once interacted, remain interlinked even when separated by vast distances. We are approaching the stage where this so-called "spooky action at a distance" will be technologically useful. This project aims to place Australia at the front of quantum entanglement research.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100662 A/Prof Mark A Schembri
Approved **How bacteria cause disease in the urinary tract**
Project Title

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	1108	MEDICAL MICROBIOLOGY

FT2 A/Prof Mark A Schembri
Administering Organisation The University of Queensland

Project Summary

This project will investigate the virulence properties of uropathogenic Escherichia coli, the major causative agent of urinary tract infections (UTI) in humans. The results will help to understand how these bacterial pathogens cause disease and will impact strategies aimed at the prevention and treatment of chronic and recurrent UTI.

FT100100657 Dr Matthew J Sweet
Approved **Toll-like receptors in infectious and inflammatory diseases: the double-edged sword of innate immunity**
Project Title

2010		\$88,249.00
2011		\$176,498.00
2012		\$176,498.00
2013		\$176,498.00
2014		\$88,249.00
Primary FoR	1107	IMMUNOLOGY

FT1 Dr Matthew J Sweet
Administering Organisation The University of Queensland

Project Summary

The innate immune system is the first line of defence against invading microorganisms. This project will explore the role of specific innate immune genes in the control of infections and the development of inflammatory diseases.

FT100100725 A/Prof Bruno vanSwinderen
Approved **Perceptual suppression mechanisms in the Drosophila brain**
Project Title

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	0604	GENETICS

FT2 A/Prof Bruno vanSwinderen
Administering Organisation The University of Queensland

Project Summary

This project will investigate common processes underlying three means to losing conscious perception: selective attention, sleep and general anaesthesia. By studying these suppression mechanisms in a genetic model, the fly *Drosophila melanogaster*, fundamental processes will be highlighted that are required in the brain for maintaining perception in general.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100970	Prof Ajayan Vinu	
Approved Project Title	Design of novel nanoporous semiconductor materials for clean environment and energy	
2010		\$114,979.00
2011		\$229,958.00
2012		\$229,958.00
2013		\$229,958.00
2014		\$114,979.00
Primary FoR	0303	MACROMOLECULAR AND MATERIALS CHEMISTRY

FT3 Prof Ajayan Vinu
Administering Organisation The University of Queensland

Project Summary

This project will develop a low cost nanoporous semiconductor device for the capture and conversion of CO₂ into fuels by using water and sunlight. This novel approach will deliver a low cost technology that offers clean energy and will help to mitigate global warming.

FT100100020	A/Prof Guy M Wallis	
Approved Project Title	Mechanisms of learning at the interface between perception and action	

2010		\$100,950.50
2011		\$202,204.50
2012		\$202,373.00
2013		\$198,248.00
2014		\$97,129.00
Primary FoR	1702	COGNITIVE SCIENCE

FT2 A/Prof Guy M Wallis
Administering Organisation The University of Queensland

Project Summary

Using the latest in brain imaging and simulator technology, this project will advance understanding of how experience shapes the visual centres of our brain. It will also support partnerships with construction, mining and health services by developing real and virtual machine interfaces and tools to enhance the outcome of simulator-based training.

FT100100502	A/Prof Stephen R Williams	
Approved Project Title	Operation of nerve cell networks in the neocortex	

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$203,298.00
2014		\$101,649.00
Primary FoR	1109	NEUROSCIENCES

FT2 A/Prof Stephen R Williams
Administering Organisation The University of Queensland

Project Summary

In humans, intellectual disabilities occur when nerve cells in the neocortex, the most complicated area of the brain, fail to function correctly. The goal of this project is to understand how neocortical areas communicate and how changes in the structure of neurons disturb their function; work that will lead to a better understanding of the operation of the neocortex.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100413	Dr Kerrie A Wilson	
Approved Project Title	Prioritising habitat restoration for biodiversity and ecosystem service outcomes	
2010		\$87,916.50
2011		\$175,756.50
2012		\$175,352.50
2013		\$158,907.00
2014		\$71,394.50
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

FT1 Dr Kerrie A Wilson
Administering Organisation The University of Queensland

Project Summary

An emerging carbon market will provide funds for habitat restoration over the coming decades, but this will only be realised through careful prioritisation and planning. This research will prioritise investments in habitat restoration in order to cost-effectively achieve biodiversity conservation and ecosystem service protection goals.

FT100100879	A/Prof Xiu Song G Zhao	
Approved Project Title	Carbon-based electrode materials for electrochemical energy storage and water desalination	
2010		\$114,979.00
2011		\$229,958.00
2012		\$229,958.00
2013		\$229,958.00
2014		\$114,979.00
Primary FoR	0306	PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

FT3 A/Prof Xiu Song G Zhao
Administering Organisation The University of Queensland

Project Summary

Clean energy and water resource are two critical issues for an environmentally sustainable Australia. The research project will lead to the discovery of innovative carbon-based electrode materials with well-designed physical and chemical properties for clean energy storage and alternative water desalination technology.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

South Australia

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

The University of Adelaide

FT100100108 Dr Jeremy J Austin

Approved Project Title **DNA and the missing: ancient DNA and advanced forensic identification**

2010		\$88,089.50
2011		\$175,715.50
2012		\$173,605.50
2013		\$170,920.50
2014		\$84,941.00
Primary FoR	0699	OTHER BIOLOGICAL SCIENCES

FT1 Dr Jeremy J Austin

Administering Organisation The University of Adelaide

Project Summary

Identifying the remains of missing persons, disaster victims and war dead is of major social and cultural importance and has significant implications for national and international justice systems. This project will apply expertise in analysis of ancient DNA to build capacity and expertise within Australia to identify highly degraded human remains.

FT100100200 Prof Barry W Brook

Approved Project Title **Systems modelling for synergistic ecological-climate dynamics**

2010		\$113,629.00
2011		\$227,858.00
2012		\$228,008.00
2013		\$228,008.00
2014		\$114,229.00
Primary FoR	0699	OTHER BIOLOGICAL SCIENCES

FT3 Prof Barry W Brook

Administering Organisation The University of Adelaide

Project Summary

The project aims to improve forecasts of the response of biodiversity to future climate change and so improve on-ground conservation management. A systems modelling framework will be developed and tested against real-world data to integrate a wide variety of biological and geophysical inputs and so produce more realistic predictions.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100101018	A/Prof Michael J Davies	
Approved Project Title	Building child health through maternal wellbeing	
2010		\$98,837.00
2011		\$196,424.00
2012		\$194,424.00
2013		\$198,174.00
2014		\$101,337.00
Primary FoR	1114	PAEDIATRICS AND REPRODUCTIVE MEDICINE

FT2 A/Prof Michael J Davies
Administering Organisation The University of Adelaide

Project Summary

Chronic diseases partly originate in the health & social circumstances of previous generations, during pregnancy, and in conditions during infancy and childhood. This project will draw from three community studies the researcher established to investigate how aspects of women's health affect their children's health and identify new opportunities for disease prevention.

FT100100400 Dr Christian J Doonan
Approved Project Title **Open framework organic materials for CO2 capture and conversion**

2010		\$88,069.00
2011		\$176,388.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0303	MACROMOLECULAR AND MATERIALS CHEMISTRY

FT1 Dr Christian J Doonan
Administering Organisation The University of Adelaide

Project Summary

The reduction of CO2 emissions from coal-fired power plants is a technological challenge of global significance. This project will address this challenge by developing a unique system, based upon open framework materials, that will selectively capture CO2 from gas streams and then catalyse its transformation into industrially useful chemicals.

FT100100585 A/Prof Christophe Fumeaux
Approved Project Title **Unconventional antennas from macro- to nano-scales**

2010		\$101,149.00
2011		\$202,648.00
2012		\$202,948.00
2013		\$202,748.00
2014		\$101,299.00
Primary FoR	1005	COMMUNICATIONS TECHNOLOGIES

FT2 A/Prof Christophe Fumeaux
Administering Organisation The University of Adelaide

Project Summary

This research project will develop unconventional radio-frequency antennas for tomorrow's miniaturised multi-function wireless communication systems. It will also extend the principles to resonant nano-structures or 'optical antennas' which offer new perspectives in sensing physics, with the possibility of single molecule detection and identification.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100767 A/Prof Bronwyn M Gillanders
Approved Project Title **Using ancient fish ear bones to overcome the shifting baseline syndrome in freshwater fish populations**

2010	\$101,649.00
2011	\$203,298.00
2012	\$203,298.00
2013	\$203,298.00
2014	\$101,649.00
Primary FoR	0602 ECOLOGY

FT2 A/Prof Bronwyn M Gillanders
Administering Organisation The University of Adelaide

Project Summary

Chemical tracers in fish ear bones from 5,500 years ago through to modern times will provide information on changes in fish ecology over centuries and identify why freshwater fish populations have declined. Outcomes will provide knowledge of how fish populations would react to altered fishing pressure and restoration of environments.

FT100100562 Dr Gary C Hill
Approved Project Title **A multi-messenger approach to understanding the high-energy Universe**

2010	\$100,099.00
2011	\$200,798.00
2012	\$202,298.00
2013	\$202,298.00
2014	\$100,699.00
Primary FoR	0201 ASTRONOMICAL AND SPACE SCIENCES

FT2 Dr Gary C Hill
Administering Organisation The University of Adelaide

Project Summary

Some of the most violent objects in the Universe produce extremely energetic radiation in the form of particles, gamma-rays and neutrinos. Innovative observatories like IceCube, a cubic kilometre of instrumented ice at the South Pole, are being used to identify these astrophysical sources and the mechanisms that produce this extreme radiation.

FT100100005 Dr James M Zanotti
Approved Project Title **The Standard Model and beyond on supercomputers**

2010	\$87,419.00
2011	\$173,338.00
2012	\$173,838.00
2013	\$173,838.00
2014	\$85,919.00
Primary FoR	0202 ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS

FT1 Dr James M Zanotti
Administering Organisation The University of Adelaide

Project Summary

Using the latest advances in supercomputing, the researcher will confront some of the most challenging problems facing nuclear and particle physicists.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

University of South Australia

FT100100393 Dr David A Beattie

Approved Project Title **Slippery when wet: lubrication with responsive polymers**

2010		\$101,429.00
2011		\$202,918.00
2012		\$202,528.00
2013		\$202,078.00
2014		\$101,039.00
Primary FoR	0306	PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

FT2 Dr David A Beattie

Administering Organisation University of South Australia

Project Summary

Lubrication and friction of aqueous (water-based) systems is important in many industrial and biological contexts, such as oil and gas exploration, solid/liquid separation, bioimplants and therapeutic treatments for joints. The outcomes of this project will provide greater control of friction through the use of stimulus responsive polymers.

FT100100312 Dr Margaret Cargo

Approved Project Title **Strengthening the evidence: how community-based Indigenous health and wellbeing interventions work to improve policy and practice**

2010		\$75,744.00
2011		\$146,438.00
2012		\$141,388.00
2013		\$141,388.00
2014		\$70,694.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

FT1 Dr Margaret Cargo

Administering Organisation University of South Australia

Project Summary

Indigenous Australians suffer high rates of premature morbidity and mortality. Despite the need for programs to improve Indigenous health and wellbeing, there is little evidence to indicate which community-based programs are effective and why they are effective. This research program addresses this 'need-evidence' gap to inform policy and practice.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100337 A/Prof Enzo Lombi
Approved Project Title **Addressing the uncertainties: Pathways, fate and associated risks of manufactured nanoparticles in the environment**

2010		\$101,649.00
2011		\$203,298.00
2012		\$201,398.00
2013		\$201,398.00
2014		\$101,649.00
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

FT2 A/Prof Enzo Lombi
Administering Organisation University of South Australia

Project Summary

Manufactured nanomaterials are increasingly present in commercial products, such as sunscreens, textiles and building materials. Their subsequent release to the environment is unavoidable. This project will deliver novel methods for assessing the associated risks, thereby supporting the safe and sustainable use of nanomaterials in Australia.

FT100100292 Dr Krasimir A Vasilev
Approved Project Title **Nanoengineered gradient substrata as a novel approach for understanding infection mechanisms**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,388.00
2013		\$176,388.00
2014		\$88,319.00
Primary FoR	0903	BIOMEDICAL ENGINEERING

FT1 Dr Krasimir A Vasilev
Administering Organisation University of South Australia

Project Summary

This project will advance our understanding of how bacteria colonise surfaces and will also inform the development of novel antibacterial coatings and diagnostic tools for device-associated infections, which have a significant impact on patients and are a huge burden to the healthcare system.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Western Australia

Curtin University of Technology

FT100100673 A/Prof Dmitry Fursa

Approved Project Title **Collision physics in lighting, fusion and astrophysical plasmas**

2010		\$92,729.00
2011		\$192,558.00
2012		\$199,658.00
2013		\$192,358.00
2014		\$92,529.00
Primary FoR	0202	ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS

FT3 A/Prof Dmitry Fursa

Administering Organisation Curtin University of Technology

Project Summary

The project will apply advanced fundamental science techniques to applications that have a high impact on the environment. These include improving energy efficiency of fluorescent lamps and development of new mercury-free designs and research in support of the international multi-billion dollar fusion energy program.

Murdoch University

FT100100432 A/Prof Farida Fozdar

Approved Project Title **Australian, transnational and postnational identities: affective aspects of social inclusion**

2010		\$89,249.00
2011		\$180,824.00
2012		\$177,599.00
2013		\$165,099.00
2014		\$79,075.00
Primary FoR	1608	SOCIOLOGY

FT2 A/Prof Farida Fozdar

Administering Organisation Murdoch University

Project Summary

The population of Australia is expected to reach 35 million in 40 years. This research will help us understand how Australians feel about their identities and how identity affects social cohesion. It will provide a basis for the design of policy to deal with the potential challenges and opportunities raised by doubling the migrant population of Australia.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

The University of Western Australia

FT100100345 A/Prof David M Coward

Approved Project Title **A networked robotic telescope array for coincident detection of transient phenomena in the optical, gravitational wave, neutrino and radio spectra**

2010	\$68,719.00
2011	\$135,638.00
2012	\$135,638.00
2013	\$135,638.00
2014	\$66,919.00

Primary FoR 0801 ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING

FT1 A/Prof David M Coward

Administering Organisation The University of Western Australia

Project Summary

An international collaboration of scientists will employ a global network of rapid response robotic telescopes and detectors to study exotic transient phenomena in the early Universe. Potential spin-offs include the application of novel image analysis techniques for identifying and tracking dangerous space junk.

FT100100025 Dr Timothy L Duty

Approved Project Title **Nanoscale quantum metrology using circuit quantum electrodynamics**

2010	\$101,649.00
2011	\$203,298.00
2012	\$203,298.00
2013	\$203,298.00
2014	\$101,649.00

Primary FoR 0204 CONDENSED MATTER PHYSICS

FT2 Dr Timothy L Duty

Administering Organisation The University of Western Australia

Project Summary

Using superconducting microcircuits, we aim to control microwave photons in order to achieve detection of nanoscale electrical and mechanical systems that is limited only by the constraints imposed by quantum mechanics. Such quantum-limited measurements will enable the use of quantum feedback for enhanced control of these nanoscale devices.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100810	A/Prof Alexandra Gillespie	
Approved Project Title	Books before printing: discovering technologies and culture from manuscripts to e-Books	
2010		\$101,376.50
2011		\$202,338.00
2012		\$198,140.50
2013		\$195,040.50
2014		\$97,861.50
Primary FoR	2001	COMMUNICATION AND MEDIA STUDIES

FT2 A/Prof Alexandra Gillespie
Administering Organisation The University of Western Australia

Project Summary

This project identifies textual technologies before printing and tracks book-culture from manuscripts to e-books producing a smarter model for technological change, recasting methods of inquiry and initiating new international collaborations. Outcomes will provide digital access to rare and valuable medieval books and two new book-length studies.

FT100100756	A/Prof Livia C Hool	
Approved Project Title	Determining how calcium regulates mitochondrial function in models of cardiomyopathy	
2010		\$87,119.00
2011		\$174,438.00
2012		\$173,988.00
2013		\$172,138.00
2014		\$85,469.00
Primary FoR	1102	CARDIOVASCULAR MEDICINE AND HAEMATOLOGY

FT1 A/Prof Livia C Hool
Administering Organisation The University of Western Australia

Project Summary

Heart failure is the leading cause of death in Australia. This project will determine the mechanisms by which the failing heart is associated with disorganisation of the cell and poor energy supply so that interventions aimed at reducing the development of heart failure can be developed.

FT100100059	Dr Anthony I Kemp	
Approved Project Title	Lifting the veil on the Geological Dark Ages: The search for Hadean Crust on Earth	
2010		\$85,289.50
2011		\$173,175.50
2012		\$173,547.00
2013		\$173,845.00
2014		\$88,184.00
Primary FoR	0403	GEOLOGY

FT1 Dr Anthony I Kemp
Administering Organisation The University of Western Australia

Project Summary

The project involves detailed field and isotopic study of some of the oldest known rocks and minerals to develop the first comprehensive picture of the earliest growth of the Australian continent. The data will reveal the timing and processes of continent formation and shed new light on the enigmatic early period of the Earth's evolution.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100734 Dr Kristen J Nowak
Approved Project Title **From causative genes to establishing therapies for patients with neuromuscular diseases**

2010		\$88,288.00
2011		\$176,426.00
2012		\$176,401.00
2013		\$176,401.00
2014		\$88,138.00
Primary FoR	1199	OTHER MEDICAL AND HEALTH SCIENCES

FT1 Dr Kristen J Nowak
Administering Organisation The University of Western Australia

Project Summary

A major focus of this project will be pursuing multiple therapeutic approaches for a class of skeletal muscle diseases, which are most often severe and lethal within the first year of life. It will also hunt down the defective genes in human patients with other neuromuscular diseases and explore how these cause disease.

FT100100909 Prof Sharon K Parker
Approved Project Title **Building individual and collective proactivity in performance-critical work contexts**

2010		\$106,390.50
2011		\$217,780.00
2012		\$222,726.50
2013		\$217,236.00
2014		\$105,899.00
Primary FoR	1503	BUSINESS AND MANAGEMENT

FT3 Prof Sharon K Parker
Administering Organisation The University of Western Australia

Project Summary

This research focuses on mobilising individuals and groups to take charge of their situations and self-initiate positive change. It aims to support proactive workforces that can deliver quality health care and community service because employees think ahead, actively introduce better ways of doing things and make the most of opportunities.

FT100100271 A/Prof Kevin D Pflieger
Approved Project Title **Development and use of novel technologies to improve drugs targeting G protein-coupled receptor complexes involved in disease**

2010		\$88,303.00
2011		\$176,606.00
2012		\$176,606.00
2013		\$176,606.00
2014		\$88,303.00
Primary FoR	0601	BIOCHEMISTRY AND CELL BIOLOGY

FT1 A/Prof Kevin D Pflieger
Administering Organisation The University of Western Australia

Project Summary

The purpose of this project is to develop and use new and innovative technologies to improve many of the drugs taken for a wide range of medical conditions. The expected outcomes are the discovery of better drugs and a greater understanding of the drugs currently on the market, particularly enabling improved management of side-effects.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Tasmania

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

University of Tasmania

FT100100237 Dr Timothy J Brodribb
Approved Project Title **Drought and death: past, present and future survival limits in the Australian vegetation landscape**

2010		\$101,649.00
2011		\$203,298.00
2012		\$203,298.00
2013		\$202,958.00
2014		\$101,309.00
Primary FoR	0603	EVOLUTIONARY BIOLOGY

FT2 Dr Timothy J Brodribb
Administering Organisation University of Tasmania

Project Summary

Science cannot predict the point at which water stress becomes lethal for plants. This research into plant water transport aims to find a new way to understand whether plant species will die or adapt to a future drier climate.

FT100100031 Dr Barbara R Holland
Approved Project Title **Interpreting biological sequence information: untangling hybridisation**

2010		\$68,151.00
2011		\$133,094.00
2012		\$133,094.00
2013		\$133,094.00
2014		\$64,943.00
Primary FoR	0102	APPLIED MATHEMATICS

FT1 Dr Barbara R Holland
Administering Organisation University of Tasmania

Project Summary

Hybridisation is believed to be important during adaptive radiations where species rapidly colonise new niches and respond to new environments, e.g. in times of climate change. This project will create the statistical tools and software required for evolutionary biologists to understand how hybridisation has helped shape the Australian flora.

FT100100250 Dr Menna E Jones
Approved Project Title **Can Tasmanian Devils survive by adapting to devil facial tumour disease?**

2010		\$88,310.50
2011		\$176,629.50
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0502	ENVIRONMENTAL SCIENCE AND MANAGEMENT

FT1 Dr Menna E Jones
Administering Organisation University of Tasmania

Project Summary

This research will examine whether or not Tasmanian Devils are capable of adapting fast enough to survive the disease epidemic caused by a new contagious cancer, devil facial tumour disease, and evade extinction. Outcomes will determine long-term management responses to the disease and will set a benchmark for managing wildlife diseases worldwide.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100609	Dr David S McGuinness	
Approved Project Title	Upgrading of light gas-to-liquid products to fuels and chemicals	
2010		\$101,649.00
2011		\$201,923.00
2012		\$201,048.00
2013		\$201,548.00
2014		\$100,774.00
Primary FoR	0306	PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

FT2 Dr David S McGuinness
Administering Organisation University of Tasmania

Project Summary

The conversion of natural gas to liquid fuels (gasoline and diesel) is seen as an important alternative to crude oil refining in Australia, and a new industry based around this is likely to emerge in the coming years. This project aims to develop methods by which some of the less valuable by-products can be upgraded to fuels and chemicals.

FT100100213	Dr Joselito Quirino	
Approved Project Title	Green sample preparation technologies for analytical chemistry	
2010		\$88,124.00
2011		\$175,823.00
2012		\$175,883.00
2013		\$175,843.00
2014		\$87,659.00
Primary FoR	0301	ANALYTICAL CHEMISTRY

FT1 Dr Joselito Quirino
Administering Organisation University of Tasmania

Project Summary

This project opens new directions for the sample preparation of small molecules, nanoparticles and bacterial cells prior to analysis and will reduce pollution from chemical laboratories. The proposed 'green' analytical chemistry techniques will strengthen the position of Australia as a world-leader in separation science.

FT100100553	Dr Ingrid A van der Mei	
Approved Project Title	From risk factor analysis to translation: multiple sclerosis and vitamin D deficiency	
2010		\$87,319.00
2011		\$154,138.00
2012		\$131,138.00
2013		\$131,138.00
2014		\$66,819.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

FT1 Dr Ingrid A van der Mei
Administering Organisation University of Tasmania

Project Summary

This research on multiple sclerosis will focus on its causes and lifestyle factors that affect it and will trial vitamin D supplementation as a treatment. Studies on vitamin D deficiency in healthy populations aim to develop new public health recommendations on sun exposure and vitamin D that balance risk of skin cancer against vitamin D deficiency.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

Northern Territory

Charles Darwin University

FT100100087 Prof Ross S Bailie

Approved Project Title **Enhancing linkage and exchange in a national research partnership to improve primary health care performance and outcomes for Indigenous peoples**

2010		\$98,439.00
2011		\$196,878.00
2012		\$196,878.00
2013		\$196,878.00
2014		\$98,439.00
Primary FoR	1117	PUBLIC HEALTH AND HEALTH SERVICES

FT3 Prof Ross S Bailie

Administering Organisation Charles Darwin University

Project Summary

This project will enhance current efforts to make high-quality primary health care services accessible to all Indigenous Australians. The work will result in widespread application of systematic and cutting-edge methods to enable health service staff and managers to review and continually work to improve the quality of their service.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

Australian Capital Territory

Commonwealth Scientific and Industrial Research Organisation

FT100100303 Prof Kostya (Ken) Ostrikov

Approved Project Title **Nanoscale control of energy and matter for future energy-efficient technologies**

2010		\$114,979.00
2011		\$229,958.00
2012		\$229,958.00
2013		\$229,958.00
2014		\$114,979.00
Primary FoR	1007	NANOTECHNOLOGY

FT3 Prof Kostya (Ken) Ostrikov

Administering Organisation Commonwealth Scientific and Industrial Research Organisation

Project Summary

Unprecedented control of energy and matter in nanoscale fabrication will be achieved using non-equilibrium self-organised plasma-solid systems. The outcomes will lead to energy-efficient, environment- and human-health-friendly production of nanomaterials for future energy, health, information, food, water, environmental and security technologies.

FT100100737 Dr Nicholas Seymour

Approved Project Title **Unraveling the evolution of galaxies and black holes with the Australian Square Kilometre Array Pathfinder**

2010		\$76,569.00
2011		\$161,138.00
2012		\$154,138.00
2013		\$139,138.00
2014		\$69,569.00
Primary FoR	0201	ASTRONOMICAL AND SPACE SCIENCES

FT1 Dr Nicholas Seymour

Administering Organisation Commonwealth Scientific and Industrial Research Organisation

Project Summary

The Australian Pathfinder for the Square Kilometre Array radio telescope will provide an unprecedented view of the Universe at radio wavelengths. The project will use this telescope to measure star formation and black hole activity in the distant Universe in order to understand the growth and evolution of galaxies.

**Summary of Successful ARC Future Fellowships Proposals for Funding
to Commence in 2010 by State and Organisation**

The Australian National University

FT100100048 Dr Benjamin C Buchler

Approved Project Title **Memory and light for integrated quantum systems**

2010		\$69,949.50
2011		\$141,365.50
2012		\$147,616.00
2013		\$147,575.50
2014		\$71,375.50
Primary FoR	0206	QUANTUM PHYSICS

FT1 Dr Benjamin C Buchler

Administering Organisation The Australian National University

Project Summary

Optical quantum information technologies have the potential to change the way we work and play, but there are problems to be overcome: we lack both a memory for quantum information and reliable light sources that can be integrated into quantum networks. This project addresses both these issues and will bring quantum technologies closer to market.

FT100100125 A/Prof Colin D Butler

Approved Project Title **Health and sustainability: Australia in a global context**

2010		\$87,707.00
2011		\$173,026.50
2012		\$168,914.00
2013		\$168,994.00
2014		\$85,399.50
Primary FoR	0599	OTHER ENVIRONMENTAL SCIENCES

FT2 A/Prof Colin D Butler

Administering Organisation The Australian National University

Project Summary

Sustainable population health in Australia is threatened by emerging global and domestic forces, including rising costs of energy and food, linked with climate change and migration. Domestic factors include a growing, ageing population. Better understanding of these forces will enhance national capacity to respond and adapt to these risks.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100329 Dr Lucas A Cernusak
Approved Project Title **Reading the isotopic archive: carbon and oxygen stable isotope ratios as recorders of plant physiological processes**

2010	\$88,319.00
2011	\$176,638.00
2012	\$176,638.00
2013	\$176,638.00
2014	\$88,319.00
Primary FoR	0607 PLANT BIOLOGY

FT1 Dr Lucas A Cernusak
Administering Organisation The Australian National University

Project Summary

This project will investigate how plant physiological processes are reflected in stable isotope ratios of carbon and oxygen in plant tissues. Results will contribute towards a mechanistic understanding of the processes that cause isotopic modifications, thereby enabling an improved interpretation of naturally occurring stable isotope signals.

FT100100320 A/Prof Michelle L Coote
Approved Project Title **Understanding and controlling the stereochemistry of free-radical polymerisation**

2010	\$114,979.00
2011	\$229,958.00
2012	\$229,958.00
2013	\$229,958.00
2014	\$114,979.00
Primary FoR	0307 THEORETICAL AND COMPUTATIONAL CHEMISTRY

FT3 A/Prof Michelle L Coote
Administering Organisation The Australian National University

Project Summary

The stereochemistry of a molecule, which relates to the relative spatial arrangement of its atoms, can have a profound effect on its physical and chemical properties. This project will use a computer-guided experimental approach to design new methods for controlling the stereochemistry of the polymers formed in free-radical polymerisation.

FT100100825 Dr Cormac S Corr
Approved Project Title **The plasma boundary: a major challenge for fusion science and material technology for ITER and beyond**

2010	\$85,069.00
2011	\$170,138.00
2012	\$170,138.00
2013	\$170,138.00
2014	\$85,069.00
Primary FoR	0202 ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS

FT1 Dr Cormac S Corr
Administering Organisation The Australian National University

Project Summary

Plasma-surface interaction drives technological innovation in areas of nanofabrication, space science and magnetic fusion systems. This interdisciplinary research project will foster national and international collaborations, keeping Australia internationally competitive in, and at the forefront of, future technologies for energy and materials.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100426 Dr Janine E Deakin
Approved Project Title **Tracking the evolution of devil facial tumour disease**

2010	\$88,319.00
2011	\$176,638.00
2012	\$176,638.00
2013	\$175,388.00
2014	\$87,069.00
Primary FoR	0604 GENETICS

FT1 Dr Janine E Deakin
Administering Organisation The Australian National University

Project Summary

The evolution of devil facial tumour disease could have disastrous effects on not only the Tasmanian Devil population but also other closely related species. This project will investigate the evolution of the disease in order to determine how new strains of the disease are arising.

FT100100241 Dr Mark H Donohue
Approved Project Title **Understanding human history in Asia through linguistic analysis**

2010	\$96,667.00
2011	\$197,144.50
2012	\$199,891.50
2013	\$197,417.50
2014	\$98,003.50
Primary FoR	2004 LINGUISTICS

FT2 Dr Mark H Donohue
Administering Organisation The Australian National University

Project Summary

This project aims to advance understanding of Australia's position in Asia and stimulate the research culture in linguistics. New research methodologies will advance knowledge and improve Australia's research skill base. Sharing expertise will strengthen institutional ties between Australia and its neighbours.

FT100100824 Dr Terry J Frankcombe
Approved Project Title **Efficient and convergent first-principles chemical dynamics**

2010	\$69,534.00
2011	\$137,318.00
2012	\$137,318.00
2013	\$137,318.00
2014	\$67,784.00
Primary FoR	0307 THEORETICAL AND COMPUTATIONAL CHEMISTRY

FT1 Dr Terry J Frankcombe
Administering Organisation The Australian National University

Project Summary

This project develops a new method for studying chemical systems using first principles quantum mechanics. The new method can solve a much larger range of chemical problems than its predecessors, allowing detailed and accurate descriptions of reactions and dynamics driven by thermal energy or activated by light.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100869 Dr Graham O Hughes
Approved Project Title **The dynamics of convection - insights for ocean and climate physics and for solar thermal energy system design**

2010	\$88,319.00
2011	\$173,588.00
2012	\$173,513.00
2013	\$171,513.00
2014	\$83,269.00
Primary FoR	0404 GEOPHYSICS

FT1 Dr Graham O Hughes
Administering Organisation The Australian National University

Project Summary

This project will inform our understanding of, and response to, climate change by improving knowledge of ocean circulation and technology for renewable energy generation. The results will lead to better climate prediction models and understanding of ocean CO₂ uptake, acidification and sea-level rise, and will help to reduce energy sector emissions.

FT100100991 Dr Gregory J Lane
Approved Project Title **New directions for nuclear structure research in Australia**

2010	\$88,319.00
2011	\$176,638.00
2012	\$176,638.00
2013	\$176,638.00
2014	\$88,319.00
Primary FoR	0202 ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS

FT1 Dr Gregory J Lane
Administering Organisation The Australian National University

Project Summary

Studies of exotic nuclei far from stability with novel devices will support Australia's only top-level research effort in nuclear structure. The research will have fundamental impacts on our understanding of both the nucleus and stellar nucleosynthesis, as well as practical implications for the development of next-generation nuclear reactors.

FT100100449 Dr Yun Liu
Approved Project Title **Ferroelectric piezoelectric materials and key problems associated with their applications in mechanical, electrical and optical energy transformations**

2010	\$88,319.00
2011	\$176,488.00
2012	\$176,088.00
2013	\$174,488.00
2014	\$86,569.00
Primary FoR	0912 MATERIALS ENGINEERING

FT1 Dr Yun Liu
Administering Organisation The Australian National University

Project Summary

This project aims to investigate the dynamic microstructure of ferroelectric piezoelectric materials in response to electrical fields or mechanical stresses, and therefore identify the factors enhancing the mechanical, electrical and optical couplings for intentional improvement and development of these materials for use in energy transformations.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100101003 Prof Desmond R Manderson
Approved Project Title **The sight of justice: images and the rule of law**

2010	\$103,624.50
2011	\$207,583.50
2012	\$201,629.00
2013	\$195,755.00
2014	\$98,085.00
Primary FoR	1801 LAW

FT3 Prof Desmond R Manderson
Administering Organisation The Australian National University

Project Summary

The rule of law is a key issue in global and national governance, which this project will study in a novel way: through the images and art that have helped us make sense of it. This will give new insights into its history, evolution and current challenges, and new ways of encouraging public understanding and engagement with the law.

FT100100358 Dr Adrian D Manning
Approved Project Title **Understanding grassy woodlands as whole ecosystems**

2010	\$88,319.00
2011	\$176,486.50
2012	\$176,366.50
2013	\$176,363.00
2014	\$88,164.00
Primary FoR	0502 ENVIRONMENTAL SCIENCE AND MANAGEMENT

FT1 Dr Adrian D Manning
Administering Organisation The Australian National University

Project Summary

Restoring Australia's once vast grassy woodlands needs a sound understanding of the whole ecosystem and robust scientific evidence to inform conservation action. This project will generate such evidence by establishing a National Outdoor Laboratory to inform the sustainable management of our nation's precious remaining woodlands.

FT100100669 Dr Ulrike Mathesius
Approved Project Title **The role of auxin in root organ specification - from symbiont to parasite**

2010	\$70,969.00
2011	\$142,538.00
2012	\$149,063.00
2013	\$148,405.50
2014	\$70,911.50
Primary FoR	0607 PLANT BIOLOGY

FT1 Dr Ulrike Mathesius
Administering Organisation The Australian National University

Project Summary

Sustainable agriculture in a changing climate depends on strategies to maximise crop performance and to minimise crop losses due to parasites. This project aims to identify genes and molecular mechanisms that symbiotic and parasitic microbes, which affect major crop plants, use to alter plant growth in a beneficial or detrimental way.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100206 Dr Josephine J McDonald
Approved Project Title **Rock Art of the Western Desert and Great Basin: long term social responses to environmental change**

2010		\$101,649.00
2011		\$203,068.00
2012		\$202,918.00
2013		\$202,778.00
2014		\$101,279.00
Primary FoR	2101	ARCHAEOLOGY

FT2 Dr Josephine J McDonald
Administering Organisation The Australian National University

Project Summary

Rock art was integral to modern humans colonising Australia (earth's most arid continent) as well as the deserts of the USA. Major environmental changes have occurred since that initial arrival. This project will explore how rock art production changed in response to changing environment and assess whether or not lessons learnt here can be applied to arid zones globally.

FT100100464 Dr Adrienne B Nicotra
Approved Project Title **Phenotypic plasticity in plants: evolution, adaptation and its relevance in a changing climate**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0602	ECOLOGY

FT1 Dr Adrienne B Nicotra
Administering Organisation The Australian National University

Project Summary

Plants are highly responsive to the conditions under which they grow, but the combination of conditions they experience will be altered by climate change. This research into plant responses to novel environments posed by climate change will assess whether we can breed for more responsive crops or predict native plant tolerance of climate change.

FT100100073 Dr Maria L Nugent
Approved Project Title **Remembering dispossession: interpreting Aboriginal historical narratives**

2010		\$78,249.50
2011		\$154,858.50
2012		\$147,744.00
2013		\$134,891.50
2014		\$63,756.50
Primary FoR	2103	HISTORICAL STUDIES

FT1 Dr Maria L Nugent
Administering Organisation The Australian National University

Project Summary

Since the arrival of the British, Aboriginal people have sought to make sense of their experiences of colonisation through telling powerful and memorable stories. This study not only reveals the richness of Aboriginal historical stories, but also models ways of using them in the telling of new Australian histories.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100527 Dr Philip J Piper
Approved Project Title **Identifying the transition from hunting to animal management in mainland and Island Southeast Asia: origins, impacts and proxies for human migration**

2010		\$77,919.00
2011		\$154,978.50
2012		\$154,843.50
2013		\$159,933.00
2014		\$82,149.00
Primary FoR	2101	ARCHAEOLOGY

FT1 Dr Philip J Piper
Administering Organisation The Australian National University

Project Summary

This project proposes to determine how and when a range of domestic and translocated wild animals were introduced to different geographic locations of mainland and Island Southeast Asia between 3,000 and 4,000 years ago. It will identify their origins, timings of introduction and what impacts they had on native island faunas.

FT100100418 Dr Matthew R Rimmer
Approved Project Title **Intellectual property and climate change: inventing clean technologies**

2010		\$86,011.50
2011		\$169,658.00
2012		\$166,013.00
2013		\$158,185.50
2014		\$75,819.00
Primary FoR	1801	LAW

FT1 Dr Matthew R Rimmer
Administering Organisation The Australian National University

Project Summary

By providing recommendations about intellectual property law, policy and practice to policy-makers and stakeholders, this project will promote research and development of clean technologies in Australia. It will also facilitate the transfer of such technologies in Australia and to developing countries and least developed countries.

FT100100613 Dr Daniel A Shaddock
Approved Project Title **Laser interferometry for Space Science**

2010		\$88,319.00
2011		\$176,638.00
2012		\$176,638.00
2013		\$176,638.00
2014		\$88,319.00
Primary FoR	0901	AEROSPACE ENGINEERING

FT1 Dr Daniel A Shaddock
Administering Organisation The Australian National University

Project Summary

Laser interferometry is an ultra-sensitive technique for physical measurements. This project will develop laser interferometry to benefit future space missions studying astronomy, astrophysics, climate change and Australia's water resources.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100470 Dr Adrian P Sheppard
Approved Project Title **Testing theories of two-phase fluid flow in porous media through experiment, imaging and modelling**

2010	\$100,529.00
2011	\$201,458.00
2012	\$197,978.00
2013	\$185,078.00
2014	\$88,029.00
Primary FoR	0203 CLASSICAL PHYSICS

FT2 Dr Adrian P Sheppard
Administering Organisation The Australian National University

Project Summary

The process underlying oil extraction, groundwater flow and the sequestration of carbon dioxide is that of one fluid pushing another out of the microscopic spaces in porous rocks and soils. Using the latest three-dimensional X-ray microscopes and computing technology, the project will image and model these fluid flows, allowing theories to be tested for the first time.

FT100100242 Prof Daniel Stoljar
Approved Project Title **Knowledge of consciousness**

2010	\$98,477.50
2011	\$196,055.50
2012	\$202,256.50
2013	\$202,256.50
2014	\$97,578.00
Primary FoR	2203 PHILOSOPHY

FT3 Prof Daniel Stoljar
Administering Organisation The Australian National University

Project Summary

This project explores and defends a new philosophical perspective on introspective knowledge and charts its connection to larger issues of human rationality and consciousness.

FT100100160 Dr Andrey A Sukhorukov
Approved Project Title **Functional nonlinear nanophotonics**

2010	\$77,456.50
2011	\$147,609.00
2012	\$142,605.00
2013	\$142,605.00
2014	\$70,152.50
Primary FoR	0205 OPTICAL PHYSICS

FT1 Dr Andrey A Sukhorukov
Administering Organisation The Australian National University

Project Summary

This project will uncover novel ways of controlling ultra-short optical pulses through the special structuring of materials at the nanoscale. New functionalities based on enhanced nonlinear light-matter interactions will underpin advances in future optical communication networks and computing systems, laser radars and sensing applications.

Summary of Successful ARC Future Fellowships Proposals for Funding to Commence in 2010 by State and Organisation

FT100100468 Dr Andrew G Truscott
Approved Project Title **Observing Einstein-Podolsky-Rosen entanglement with ultracold atomic gases**

2010	\$87,319.00
2011	\$173,638.00
2012	\$172,638.00
2013	\$172,638.00
2014	\$86,319.00

Primary FoR 0206 QUANTUM PHYSICS

FT1 Dr Andrew G Truscott
Administering Organisation The Australian National University

Project Summary

As a fundamental test of quantum mechanics, the project will demonstrate for the first time the famous Einstein-Podolsky-Rosen paradox in the regime of a macroscopic number of entangled massive particles. As well as enabling the design of new gravitational sensors, the outcomes will give insights into the unification of quantum theory with gravity.

FT100100228 Dr Timothy D Windsor
Approved Project Title **Social relations and social engagement in older adulthood: implications for health, well being and cognition**

2010	\$69,719.00
2011	\$138,588.00
2012	\$137,738.00
2013	\$137,738.00
2014	\$68,869.00

Primary FoR 1701 PSYCHOLOGY

FT1 Dr Timothy D Windsor
Administering Organisation The Australian National University

Project Summary

This project will examine the nature of changes in peoples social networks that occur with age and the effects of these changes on health and well being in later life. The project will use information collected as part of several ongoing Australian studies of ageing and will have implications for social policy.