

## SUPPORT FOR INTERNATIONAL COLLABORATIONS

The objectives of the Academy's program of international scientific and technological collaborations are to improve Australian access to science and technology and to increase awareness of Australian research.

The Academy's program gives Australian researchers the opportunity to collaborate with foreign colleagues, to widen research perspectives and experience, to exchange ideas, to be recognised in the international arena, to gain information and knowledge of techniques that will stimulate and advance Australian research and to be involved in large international projects.

The Academy's international programs are structured into four sections: short-term visits to Europe, North America and Asia and long-term postdoctoral fellowships. The programs support collaborative research between professional Australian scientists and technologists and their colleagues in Europe, Korea, China, Japan, Taiwan, the US, Canada and Mexico. The Academy also administers postdoctoral fellowships with Japan and Korea.

The programs, which provide funds for living and travelling costs, are funded as part of the Department of Education, Science and Training's International Science Linkages — Science Academies Program. The French Embassy continues to generously provide travel funds for the top six grant recipients selected to visit France under the Europe program.

Full details of all programs are available at:

[www.science.org.au/internat/exchange/contscix.htm](http://www.science.org.au/internat/exchange/contscix.htm)

The following researchers were supported in 2006:

### Europe

Researcher	Project	Host institution
Dr John Aquilina University of Wollongong	An examination of the architecture of a polydisperse small heat-shock protein using ion mobility mass.	Professor Carol Robinson University of Cambridge, UK
Dr Zhong Qiang Chen University of Western Australia	Benthic extinction and survival in high latitude regions during the Permian-Triassic mass extinction 251 million years ago: re-examination of brachiopod fossil collection from Greenland.	Professor David Harper Geological Museum of Denmark
Dr Richard Clark University of Queensland	Exploring the therapeutic potential of a novel family of proteins.	Dr Ulf Goransson Uppsala University, Sweden
Dr Ian Darby RMIT University	Role of stromal (cancer associated) fibroblasts in promoting tumour.	Dr Alexis Desmouliere University of Limoges, France
Associate Professor Karu Esselle Macquarie University	Advanced engineered electromagnetic surfaces.	Dr John Batchelor University of Kent, UK
Dr Thomas Ferenci University of Sydney	Analysis of beneficial mutations in evolving experimental populations.	Professor Dominique Schneider Joseph Fourier University, France

Researcher	Project	Host institution
Dr Briony Forbes University of Adelaide	Investigating molecular interactions of the insulin receptor with its ligands using novel ligand analogues and hydrogen/deuterium.	Professor Pierre De Meyts Hagedorn Research Institute, Denmark
Dr Duncan Galloway University of Melbourne	Thermonuclear processes and the neutron star equation of state.	Professor Wim Hermsen Netherlands Institute for Space Research
Dr Sally Gras University of Melbourne	Optimising the design of functional fibrils for nanotechnology.	Professor Christopher Dobson University of Cambridge, UK
Dr Michael Hall Australian Institute of Marine Science	Identification of bacterial quorum sensing systems and probiotics application in aquaculture hatcheries.	Professor Michael Givskov Technical University of Denmark
Dr Marie Herberstein Macquarie University	Love hurts: cannibalism and genital damage in spiders.	Professor Jutta Schneider University of Hamburg, Germany
Dr Chris Ling University of Sydney	Application of advanced crystal growth techniques to novel multiferroic oxide.	Dr Dimitri Argyriou Hahn-Meitner Institute, Germany
Dr Michelle Luciano Queensland Institute of Medical Research	Finding genes that influence reading ability.	Professor Lon Cardon University of Oxford, UK
Dr Graham Marshall Macquarie University	Development of microphotonic waveguide devices for high bandwidth optical signal manipulation.	Professor Ian Bennion Aston University, UK
Dr Ute Marx University of Queensland	Interactions of the bacterial enterotoxin STa with the human peptide hormone receptor guanylyl cyclase-C.	Professor Paul Rosch University of Bayreuth, Germany
Dr Ann McNeill University of Adelaide	'Real time' studies of root architecture in soil.	Professor Peter Gregory Scottish Crop Research Institute, UK
Dr Gregory Metha University of Adelaide	Chemical reactivity of surface-supported and size selected metal-carbide.	Professor Ueli Heiz Technical University of Munich, Germany
Dr Simon Quigley University of Queensland	Muscle biology and its influence on meat yield in beef cattle.	Dr Jean-Francois Hocquette National Institute for Agricultural Research, France
Dr Alan Richardson CSIRO Plant Industry	Molecular analysis of rhizosphere interactions in relation to the phosphorus nutrition of plants.	Professor Peter Gregory Scottish Crop Research Institute, UK

Researcher	Project	Host institution
Associate Professor Ann Roberts University of Melbourne	Phase singularities in focussed electromagnetic fields.	Dr Peter Torok Imperial College London, UK
Dr John Roberts University of New South Wales	Universal period distributions over finite fields for rational maps with time reversal symmetry.	Dr Claude Viallet Pierre and Marie Curie University, France
Dr Maitreyee Roy University of Sydney	Ultra fast full field optical coherence tomography for biomedical imaging.	Professor Arnaud Dubois Centre Universitaire d'Orsay, France
Associate Professor Una Ryan Murdoch University	Development and evaluation of diagnostic assay for <i>Cryptosporidium</i> and <i>Giardia</i> .	Dr Simone Caccio Istituto Superiore di Sanità, Italy
Dr Ilchat Sabirov Deakin University	Deformation behaviour of ultrafine-grained steels.	Professor Juri Estrin Clausthal University of Technology, Germany
Dr Alexandre Samarian University of Sydney	Particulates Dynamics in afterglow plasma: manipulation and deposition.	Professor Laifa Boufendi University of Orleans, France
Dr Sergey Shabala University of Tasmania	Combining MIFE and xylem pressure-probe techniques to study plant adaptive responses to salinity.	Professor Ulrich Zimmerman University of Würzburg, Germany
Associate Professor William Sherwin University of New South Wales	Developing an information-theory based approach to population genetics and management.	Dr Michael Lachmann Max Planck Institute for Evolutionary Anthropology, Germany
Dr Ronald Sluyter University of Sydney	Erythrocyte P2X7 receptors, red blood cell ageing and vesicle release.	Dr Geil Bosman University Medical Centre Nijmegen, Netherlands
Dr Daniela Traini University of Sydney	Novel co-processed synergist antibiotic inhalation therapy for the twenty first century.	Professor Paolo Colombo University of Parma, Italy
Dr Jane Ward University of Melbourne	Role of airway smooth muscle-derived IL-33 in asthma.	Dr Stuart Hirst Kings College London, UK
Dr Craig Williams University of South Australia	Surveillance of Asian tiger mosquitoes in a first world urban setting: developing strategies for Australia.	Professor Alessandra Della Torre University of Rome, La Sapienza, Italy
Dr Phillipe Ziegler University of Tasmania	Assessing fishery dynamics and the impact of different management options on the Tasmanian scalefish fishery using the ISIS-Fish model.	Dr Dominique Pelletier French Research Institute for Exploitation of the Sea, France

## Asia

### Japan Society for the Promotion of Science bilateral programs

Researcher	Project	Host institution
Dr Andrew Baird James Cook University	Are symbionts a costly burden to coral larvae?	Professor Michio Hidaka University of Ryukus
Dr Zhenxiang Cheng University of Wollongong	Development and characterisation of multiferroic materials.	Dr Hideo Kimura National Institute for Materials Science
Dr Ingeborg Koch University of New South Wales	Mode estimation with linear histograms.	Associate Professor Kanta Naito Shimane University
Dr Loo-Teck Ng University of Western Sydney	Surface modification of nanoparticles as pH-responsive carriers for drug delivery status.	Professor Kenji Kono Osaka Prefecture University
Professor Pavel Trivailo RMIT University	Non-linear dynamic modelling, optimal design, deployment and control of space compound systems (multiple cooperative robotic manipulators and satellite formations).	Professor Hironori Fujii Tokyo Metropolitan University

### Japan Society for the Promotion of Science Invitation Fellowships (short-term)

Researcher	Project	Host institution
Associate Professor Kenneth Robert Harris University of NSW	High-pressure studies of ionic liquids.	Dr Mitsuhiro Kanakubo National Institute of Advanced Industrial Science and Technology
Dr David Henry RMIT University	Regional density functional theory study of hydrogen interactions with novel light metal.	Professor Dr Akitomo Tachibana Kyoto University
Professor Robert Henry Southern Cross University	Molecular analysis of genetic resources in the <i>Oryza</i> (rice) genus.	Dr Duncan Vaughan National Institute of Agrobiological Sciences
Dr Richard Lang Monash University	Visualising pacemaker activity driving pyeloureteric peristalsis using fluorometric microscopy and the Hyogo synchrotron.	Professor Hikaru Suzuki Nagoya City University Medical School
Professor David Miller James Cook University	Understanding the evolution of bilaterality: the roles of BMP antagonists in planarian development and regeneration.	Professor Kiyokazu Agata Kyoto University

Researcher	Project	Host institution
Dr Kazuo Suzuki University of NSW	Transcriptional gene silence induced by small interfering (si)RNA in HIV: elucidation of underlying mechanisms.	Professor Toshiki Watanabe University of Tokyo
Dr Tuquabo Tesfamichael Queensland University of Technology	Co-deposition of nanostructured metal-oxide films using molecular beam epitaxy (MBE).	Dr Masashi Arita Hokkaido University
Dr Serge Zhuiykov CSIRO	Development of a novel biochip technology for detection of TNT explosives on sub-ppb levels.	Professor Dr Norio Miura Kyushu University

### Japan Society for the Promotion of Science Invitation Fellowships (long-term)

Researcher	Project	Host institution
Associate Professor Alexander Khromykh University of Queensland	Modulation of host innate immune response by West Nile viruses.	Professor Shizuo Akira Osaka University

### Japan Society for the Promotion of Science Postdoctoral Fellowships

Researcher	Project	Host institution
Mr Jeremy Dalseno University of Melbourne	Time dependent CP-violation in the B-meson sector with the Belle detector.	Associate Professor Masashi Hazumi KEK High Energy Accelerator Research Organisation
Mr Mark Doubell Flinders University	Microscale phytoplankton dynamics: physical and biological coupling in contrasting marine systems.	Professor Hidekatsu Yamazaki Tokyo University of Marine Science and Technology
Mrs Sridevi Embar-Gopinath University of Tasmania	Enteromyxosis in marine fish: disease mechanism.	Professor Dr Kazuo Ogawa University of Tokyo
Dr Scott Findlay University of Melbourne	Technique development for quantitative atomic resolution characterisation of crystalline interfaces using scanning transmission electron microscopy.	Professor Dr Yuichi Ikuhara University of Tokyo
Mr Jodie Goodridge University of Western Australia	Modification of NKT cell functions by stimulation with different dendritic cell subpopulations.	Professor Dr Kazunori Onoe Hokkaido University
Mr Timothy Peter Hancock James Cook University	Developing supervised techniques for mining metabolic pathways.	Dr Hiroshi Mamitsuka Kyoto University

<b>Researcher</b>	<b>Project</b>	<b>Host institution</b>
Dr Simon Hill Flanders' Mechatronic Technology Centre, Belgium	The control of environmental noise emissions from large three-dimensional noise sources.	Professor Dr Nobuo Tanaka Tokyo Metropolitan University
Dr Steven Jarvis Australian National University	Understanding the role of non-government actors and private consortia in realising large-scale information and communication technology systems innovation in Japan.	Associate Professor Hideyuki Tanaka University of Tokyo
Dr Judy Yu-Ting Lee University of Melbourne	Synthesis and encapsulation of lipid, polysaccharide and protein based microspheres.	Dr Yasuo Lida National Institute of Advanced Industrial Science and Technology
Ms Xiaojing Li University of NSW	Optimal integrated multi-sensor system for full-scale structural monitoring based on advanced signal processing.	Professor Yukio Tamura Tokyo Polytechnic University
Dr James Llewelyn Kobe University, Japan	Japan, Southeast Asia and the Vietnam War: Japan's political and diplomatic responses to the Vietnam War 1965–75.	Professor Hiroshi Ohta Kobe University
Mr Nathan Miles University of Wollongong	The physiology of diadromous and non-diadromous populations of four Japanese fish species.	Professor Hiroshi Ueda Hokkaido University
Dr Thomas Mollee University of Queensland	Mathematical theory of nonlinear reaction-diffusion equations.	Professor Masayasu Mimura Meiji University
Dr Thomas Oates Forschungszentrum Dresden-Rossendorf, Germany	Self-organisation of nanoparticles.	Professor Yukio Yamaguchi University of Tokyo
Dr Abdullah Ozer Victoria University of Technology	Vibration suppression of robot arms in metal spinning applications.	Professor Dr Hironiko Arai National Institute of Advanced Industrial Science and Technology
Mr Julian Rosalie Monash University	Microstructural control of magnesium alloys through severe plastic deformation and micro-alloying.	Dr Alok Singh National Institute for Materials Science
Dr Allison Sutherland University of Queensland	The endothelin axis and pulmonary hypertension.	Associate Professor Masataka Sata University of Tokyo
Ms Shuko Suzuki Queensland University of Technology	Construction of a new skin model by tissue engineering.	Professor Yoshito Ikada Nara Medical University
Dr Guy Williams University of Tasmania	Down-slope mixing of Antarctic bottom water.	Associate Professor Shigeru Aoki University of Hokkaido

## China

Researcher	Project	Host institution
Dr Richard Collins University of New South Wales	Impact of plant iron uptake strategies on heavy metal mobilisation: optimising plant growth while minimising health risks.	Professor Tiesheng Sun Shenyang University
Dr Jian Li Monash University	Discovery of novel antibiotics against Gram-negative superbugs from marine organisms.	Professor Guang-Ce Wang Chinese Academy of Sciences
Dr Chunlu Liu Deakin University	Investigation on Australian contractors in the Chinese construction market.	Mr Bijin Wu Guangzhou Institute of Energy Conversion
Dr Timothy McConachy CSIRO	The formation and evolution of hydrothermal products at mid-ocean ridges.	Dr Zeng Zhigang Chinese Academy of Sciences
Dr Mary She University of South Australia	Development of the on-farm fibre measurement (OFFM) techniques for identification of superfine/fine wool lines through advanced machine vision technology.	Professor Wensheng Zhang Chinese Academy of Sciences
Dr Jiazhao Wang University of Wollongong	Fabrication and characterisation of silicon thin film electrode materials for thin lithium microbatteries.	Professor Xinjun Li Guangzhou Institute of Energy Conversion
Dr Jian Wu University of Wollongong	Development and application of a wearable fabric sensor based on conducting polymers and carbon.	Professor Yongfang Li Chinese Academy of Sciences

## Taiwan

Researcher	Project	Host institution
Associate Professor Kuldeep Kumar Bond University	Application of artificial intelligence in economics and finance: bankruptcy prediction and fraud.	Professor Berlin Wu National Chengchi University
Dr Guoqi Qian University of Melbourne	Statistical inference concerning model comparison and selection capture-recapture data in wildlife population studies.	Professor Anne Chao National Tsing Hua University
Dr Anantanarayanan Raman Charles Sturt University	Nutritional ecology of insects invading <i>Machilus japonica</i> (Lauraceae) in Taiwan: towards better insect pest management in forest ecosystems using two host-specific embedded insects.	Associate Professor Man-Miao Yang National Chung Hsing University

## Korea

Researcher	Project	Host institution
Associate Professor Richard Lai La Trobe University	Component specification measurement and improvement.	Professor Byung Wook Lee Kyungwon University
Dr Gerd Schmalz University of New England	Geometry of non-integrable CR-spheres.	Professor Kang-Tae Kim Pohang University of Science and Technology
Professor Wojtek Wlodarski RMIT University	Novel sensors for <i>in situ</i> monitoring of gaseous hydrogen based on polyaniline/semiconducting metal oxides nanofibre composites operating at room temperature.	Professor Koo Shin University of Sejong.

## North America

Researcher	Project	Host institution
Dr Andrew Bowie University of Tasmania	Atmospheric deposition of trace elements to the upper ocean and their impact on Earth's climate: focus on iron in the Sargasso Sea.	Dr Peter Sedwick Bermuda Biological Station for Research, USA
Dr Timothy Brodribb University of Tasmania	Short term dynamics in the spatial distribution of photosynthesis within a branch.	Professor Missy Holbrook Harvard University, USA
Associate Professor Justin Brookes University of Adelaide	Turbulent mixing, internal waves and intrusions: spatial variability of resource supply and metabolic activity.	Professor Sally MacIntyre University of California, USA
Associate Professor Tailoi Chan-Ling University of Sydney	Hemi-channel and gap functional communication in retinal glial cells.	Professor Bruce Robert Ransom University of Washington, USA
Dr Michelle Critchley CSIRO Manufacturing and Infrastructure Technology	Chemical treatments for controlling <i>Legionella</i> associated with protozoa in cooling towers.	Professor Sharon Berk Centre for Management, Protection and Utilization of Water Resources, USA
Dr Christopher Elvin CSIRO Livestock Industries	Mechanical analysis of cross-linked recombinant resiling effects of solvent environment on resilience (rubber efficiency), modulus (stiffness) and fatigue.	Professor John Gosling University of British Columbia, Canada
Dr Philip England CSIRO Marine and Atmospheric Research	New genomic and computational methods to estimate genetic population size in marine species.	Dr Robin Wales National Oceanic and Atmospheric Administration, USA

Researcher	Project	Host institution
Dr Alexander Fuerbach Macquarie University	Novel ultra-broadband laser materials.	Professor Mathias Lanner City University of New York, USA
Dr Sarah Harmer-Basel University of South Australia	The impact of iron concentration on surface reactivity and wet ability of sphalerite.	Professor Wayne Nesbit University of Western Ontario, Canada
Dr Leonie Heilbronn University of New South Wales	Mitochondrial dysfunction insulin resistance and type 2 diabetes.	Associate Professor Mathew Huller Virginia Polytechnic Institute and State University, USA
Dr Elizabeth Krenske Australian National University	Chemical bonding: a new framework and its application.	Professor Kendall Hook University of California, USA
Dr Christina Lim University of Melbourne	Optical interconnections for DWDM interface in millimetre-wave fibre-wireless systems.	Professor Paul Yu University of California, USA
Dr Laura Parry University of Melbourne	Anti-ageing role of relaxin in blood vessels.	Professor Kirk Conrad University of Florida, USA
Dr Ilya Shadrivov Australian National University	Non-linear metamaterials with negative refraction.	Professor Daniel Van Der Weidel University of Wisconsin-Madison, USA

### East Asia and Pacific Summer Program for US Graduate Students

Researcher	Project	Host institution
Mr Emory Chan University of California Berkeley	Rheology of anisotropic nanoparticle solutions in microfluidic devices.	Associate Professor Justin Cooper-White University of Queensland
Mr Timothy Davidson University of Oregon	Invasion ecology, marine biology.	Professor Chad Hewitt Australian Maritime College
Ms Boonsri Dickinson University of Colorado	A continuum model describing binary and continuous size distributions: kinetic theory for rapid, granular flows and discrete element modelling.	Professor Aibing Yu University of New South Wales
Mr John Eme University of California	Factorial aerobic scope of hyperoxic-cultured Murray cod ( <i>Maccullachella peeli peeli</i> ).	Associate Professor Peter Frappell La Trobe University
Ms Dawn Feltus North Dakota State University	The development of <i>Cryptosporidium parvum</i> life cycle stages using a host cell-free culture method.	Associate Professor Una Ryan Murdoch University

Researcher	Project	Host institution
Ms Rebecca Frederick University of Utah	A conserved role for Miro proteins in mitochondrial distribution and morphology.	Dr Michael Ryan La Trobe University
Ms Valerie Henderson Georgia Institute of Technology	Understanding ICT trends in the deaf community.	Professor Jennie Carroll University of Sydney
Ms Jays Janney Indiana University	Political sociology, the movement and globalisation of social movements.	Dr Michael Hurley La Trobe University
Ms Alissa Johnson University of California Berkeley	Characterisation of polycrystalline thin-film solar cells.	Associate Professor Armin Aberle University of New South Wales
Mr Adam LaPrad Boston University	The airway's response to a deep inspiration <i>in vitro</i> : the effects of amplitude and duration.	Professor Howard Mitchell University of Western Australia
Ms Rhesa Ledbetter Idaho State University	Growth conditions affecting the culturability of soil microorganisms.	Dr Peter Janssen University of Melbourne
Ms Liliana Lettieri Georgia Institute of Technology	Colours, conspicuousness and visual perception in some coral reef fishes: measuring colours and predicting ecological interactions.	Associate Professor Justin Marshall University of Queensland
Ms Bethany Lyles University of California Berkeley	The effect of the angular momentum and parity mismatch on the Surrogate Ratio Method: fission fragment angular distributions and quantifying the onset of the Weisskopf-Ewing Limit.	Professor David Hinde Australian National University
Ms Christine Metzger University of Oregon	Paleosol maps of global climate change in the middle Miocene of Australia: maps and dataset.	Dr Erick Bestland Flinders University
Ms Vanessa Michelou University of Delaware	Viral ecology and control of toxic cyanobacteria.	Dr Peter Pollard Griffith University
Ms Jessica Robinson North Carolina State University	Current state of monitoring programs in New South Wales National Parks.	Professor Ralf Buckley Griffith University
Ms Alyson Sagle University of Texas	Surface characterisation of polymer-coated reverse osmosis membranes.	Associate Professor Vicki Chen University of New South Wales
Ms Kathleen Staffier University of Wisconsin-Madison	Understanding the effects of Proterozoic deformation in the Kalkadoon-Leichardt belt, Mt. Isa, Australia.	Professor Tom Blenkinsop James Cook University

<b>Researcher</b>	<b>Project</b>	<b>Host institution</b>
Ms Jan Weiss University of Colorado	Validation of a GPS multipath model in an urban environment using 3D LiDAR-derived structural models.	Professor Chris Rizos University of New South Wales
Ms Meredith Wright University of Georgia	The structure and function of the class I integron-associated gene cassette pool in environmental bacteria under varying degrees of selective pressure.	Dr Hatch Stokes Macquarie University

Further information about support for international collaborations is available at:  
[www.science.org.au/internat](http://www.science.org.au/internat)