



## National research priorities welcomed

The Academy welcomed the Commonwealth government's announcement of the four national research priorities in December. They are:

- an environmentally sustainable Australia;
- promoting and maintaining good health;
- frontier technologies for building and transforming Australian industries; and
- safeguarding Australia.

The Academy's Secretary (Science Policy), Dr Michael Barber, said, 'The priorities provide great opportunities for exciting fundamental science at a world-class level. They balance the pursuit of opportunities for wealth creation with attention to the risks that we all face – risks to our wealth, health, state of the environment and our safety.'

Dr Barber said that the research community would be delighted that the government had recognised that science was at the centre of public policy, making a vital contribution to the quality of our lives.

He commended the government for its widespread consultations on the priorities, to which the Academy had contributed, and went on to say that it was the responsibility of researchers and the government to ensure that the community was kept well informed of progress in these priority areas.

In April the Academy will hold a High Flyers Think Tank to consider interdisciplinary ways in which the priority on safeguarding Australia could be implemented.

## Major facilities workshop

Directors or senior representatives of Australia's 15 Major National Research Facilities (MNRFs) joined members of the Academy's steering group on research infrastructure for a workshop in Canberra on 12 December. The aims of the workshop were to improve cooperation between the facilities and to develop the case for more coherent facility funding. A subsidiary aim was to provide feedback to the Commonwealth Department of Education, Science and Training on how to improve future bidding rounds.

The workshop, chaired by Dr Phil McFadden, Chief Scientist, Geoscience Australia, began with an introductory talk by the Academy's Secretary (Science Policy), Dr Michael Barber. Then each facility's representative described the management challenges they face, including changes in government funding guidelines, complex partnership arrangements and whether to own

equipment or pay to use equipment at another institution. Discussion then centred on ways to solve problems together.

The workshop participants concluded that the main source of the difficulties encountered in the last bidding round was the ad hoc nature of the Major National Research Facilities Program. They also felt that the onus is now on the research community to work with government officials to build a shared understanding of the impediments and opportunities associated with building and maintaining major facilities in Australia.

More workshop activities are being planned in order for participants to identify ways in which the major facilities can cooperate, and how the image and profile of the facilities can be improved so that they can become a key part of Australia's research infrastructure.



The International Convenor of the Royal Society of Edinburgh, Professor Rona MacKie, visited the Academy in December and had discussions with members of Council. She is pictured with, from left, Professor Bruce McKellar, Professor Kurt Lambeck and Professor Ian McDougall. While in Canberra the Academy arranged for Professor MacKie and her husband, Nobel Laureate Sir James Black FRS, to present lectures at the Canberra Hospital.

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# Earth sciences strategy begins

The Academy's National Committee for the Earth Sciences has started work on a 10-year strategy for Australian Earth sciences research. This work has been funded by a \$45 000 grant to the Academy from the Australian Research Council's Learned Academies Special Projects Scheme. The strategy aims to ensure that the Earth sciences remain relevant to Australia and will highlight the economic, environmental and social benefits that arise from research in this area.

The committee is chaired by Academy Fellow, Dr Phil McFadden, the chief scientist of Geoscience Australia. The Academy's science policy advisor, Dr Mark Matthews, is assisting the committee with quantifying the national impact of Earth sciences.

One immediate result of the more holistic approach initiated by the committee has been to mobilise wider activity in support of the Australian Bureau of Statistics in their efforts to produce environmental National Accounts in line with new United Nations guidelines. The new experimental statistics seek to quantify

the aggregate annual changes to the value of Australia's natural assets. Changes in value are partly caused by the combined impact of environmental degradation (for example, salinity and soil acidification) and by the extraction of minerals, oil and gas, and offset by the addition of the new reserves found by geological exploration.

## Science for seniors

The Academy will present another program of Scintillating Science for Seniors in Canberra during 2003. In the program, Fellows and other scientists will deliver eight lectures on science to older people. The lectures will be held at the Woden Senior Citizens' Club.

The program is funded by the Training and Adult Education Section of the ACT government. For more information contact Megan Rogers on (02) 6247 5777 or [megan.rogers@science.org.au](mailto:megan.rogers@science.org.au).

## Forthcoming events

- Science at the Shine Dome, 30 April to 2 May – see page 3 and [www.science.org.au/sats2003](http://www.science.org.au/sats2003).

## New topics on Nova

- Driver fatigue – an accident waiting to happen
- Synchrotrons – making the light fantastic

[www.science.org.au/nova](http://www.science.org.au/nova)

## Award deadlines 2003

Oxford Nuffield Medical Fellowship  
16 May

For more information see  
[www.science.org.au/awards/  
awards.htm](http://www.science.org.au/awards/awards.htm).

## International exchanges

For information on deadlines see  
[www.science.org.au/internat/  
index.htm](http://www.science.org.au/internat/index.htm).

## Basser Library

Anyone wishing to use the Basser Library should contact the librarian, Rosanne Walker, telephone (02) 6247 9024 or email [lb@science.org.au](mailto:lb@science.org.au).

## Gifts to the Academy

If you would like to make a gift or a bequest to the Academy of Science or the Australian Foundation for Science, please contact the Executive Secretary, telephone (02) 6247 5777 or email [es@science.org.au](mailto:es@science.org.au).



Lord May, left, Dr Brendan Nelson and Dr Jim Peacock at Parliament House in Canberra. Photo: Peter Pockley.

## Science meets Parliament

Each year the Federation of Australian Scientific and Technological Societies (FASTS) organises Science Meets Parliament Day, where scientists lobby members of the Federal Parliament. The Academy was one of the sponsors of the event, held on 12 and 13 November.

About 160 scientists met about 140 members and senators at Parliament House. The Academy was represented by Professor Anthony Klein, Dr Max Coltheart and Professor Erich Weigold.

The President of the Royal Society and Corresponding Member of the Academy, Lord May of Oxford, addressed the visiting scientists and

also a Parliament House cocktail party for members, senators and scientists.

Academy President, Dr Jim Peacock, accompanied Lord May to meetings with the Prime Minister, Mr John Howard, and the Minister for Education, Science and Training, Dr Brendan Nelson. The Minister for Science, Mr Peter McGauran, hosted a dinner for Lord May, which was attended by officers of the Academy and senior science policy makers.

While he was in Canberra Lord May had meetings with Dr Peacock and the Executive Secretary, Professor Sue Serjeantson, and lunched with Fellows at Ian Potter House.

## Science at the Shine Dome

The Academy's annual forum, *Science at the Shine Dome*, will be held from 30 April to 2 May. Events will include the popular New Fellows Seminar, the presentation of awards and delivery of the Burnet lecture.

At this year's symposium – *Nanoscience: where physics, chemistry and biology collide* – leading scientists will discuss viruses and high-tech materials, smart particles, crystals, nanomaterials for energy and the environment, quantum computing and turning nanoscience into nanotechnology.

A more detailed program of the three-day event is available on the Academy's website at [www.science.org.au/sats2003](http://www.science.org.au/sats2003).

Special events have been prepared for invited teachers and early-career researchers.

## Queensland region

The Director of the Centre for Research in Vascular Biology at the University of Queensland, Professor Julie Campbell, is the new chair of the regional group of Queensland Fellows.

## Nanotechnology benchmarking project

The Academy began another high-profile science policy project this year. The study aims to benchmark Australia's current and future international standing in nanotechnology research.

The Secretary (Science Policy), Dr Michael Barber, is directing the project. Funding of \$95 000 is coming from the Australian Research Council's Learned Academies Special Projects Scheme.

The study will provide policy-makers with essential information on how leading international researchers view Australia's research capability in different aspects of nanotechnology.

It will also pilot a more general peer-assessment methodology in Australia that is particularly suitable for assessing research performance in emerging areas of science and technology. This approach was developed in the United States by the Committee on Science, Engineering and Public Policy (COSEPUP), which brings together experts from the National Academy of Sciences and other US academies. The Australian team will be liaising with COSEPUP staff throughout this project, building potentially important cooperation with US experts on science policy.

## Max Jacobs forestry awards

The Maxwell Ralph Jacobs awards promote research in forestry. The winners for 2003 are Mr Philip Alcorn, from the Australian National University, and Ms Natalie Kelly, from the Forest Science Centre in Victoria.

Mr Alcorn will use the grant to travel to a conference on uneven-aged forest management in Finland. He will deliver two papers on his research into *Eucalyptus obliqua*.

Ms Kelly is doing a PhD on the branching of *Eucalyptus regnans* crowns under different environmental conditions. Her grant will help pay glasshouse and fieldwork costs.

# Artificial photosynthesis

Photosynthesis is nature's brilliant method of storing energy from sunlight. Artificial photosynthesis aims to achieve the same end with technology.

This was the topic of the Academy's Boden Research Conference, held at Manly in Sydney from 9 to 11 January 2003. Sixty-seven scientists from the USA, Sweden, Germany and New Zealand joined Australian scientists to consider how green plants photosynthesise and how to make machines that perform similar functions. The conference was organised by Professor Christa Critchley, from the University of Queensland.

The Minister for Science, Mr Peter McGauran, opened the conference, commenting that the aims of artificial photosynthesis were closely aligned with the national research priorities. He said that the work was too important not to be funded.

The Academy's Secretary (Science

Policy), Dr Michael Barber, welcomed the delegates. He spoke of Alexander Boden's legacy to Australian science.

The themes of the scientific sessions were photon collection, photochemical conversion, carbon dioxide sequestration, photovoltaics, hydrogen production and engineering systems.

The conference included four lectures on the social and political contexts of artificial photosynthesis. The lectures were delivered by Professor Ian Lowe, from Griffith University, Dr Mehrdad Baghai, from CSIRO, Dr Richard Brown, from the University of Queensland, and Dr Miriam Baltuck, the scientific adviser to the US Ambassador in Australia, and recognised that the introduction of artificial photosynthesis will have significant social and economic implications.

Professor Lowe presented a provocative and humorous speech after the conference dinner.

# Living with climate change

Following initial discussions between the Academy, the Australian Greenhouse Office (AGO) and the Australian Academy of Technological Sciences and Engineering, the AGO asked all four learned academies to organise a conference on 'Living with Climate Change'. The conference was funded by the AGO and conducted under the auspices of the National Academies Forum from 18 to 19 December in the Shine Dome.

The conference brought together business leaders, scientists, government officials and representatives of the wider community to discuss how best to adapt to the impacts of climate change. Its main aim was to provide advice to the AGO for incorporation into the forward strategy for dealing with climate change and to launch a sustained debate on this critical issue. The conference was opened by the

Federal Minister for the Environment and Heritage, David Kemp.

Advice to the Australian Greenhouse Office arising from the conference is that the strategy for adaptation to the impacts of climate change must be developed so as to link environmental, economic and social planning; the knowledge of possible impacts and the proposed strategy for adaptation must be widely communicated; incentives to change will be required, since knowledge alone will not be sufficient to change behaviour; and a partnership approach should be taken, involving industry, community and all spheres of government.

The conference proceedings will be published by the Australian Greenhouse Office.



The Academy's logo for its golden jubilee.

## Golden jubilee in 2004

The Academy will be celebrating its golden jubilee in 2004. Planning is already well under way.

The highlight will be *Science at the Shine Dome* from 5 to 7 May. This will as usual include the induction of new Fellows, the Academy's annual general meeting and a symposium. The symposium will be a celebration of Australian science, featuring younger scientists looking to the future. Commemorative flags will fly along Commonwealth Avenue in Canberra to coincide with *Science at the Shine Dome*.

## Technology topics on Nova

In November the Academy's educational website, *Nova: Science in the news*, completed the final topic in a technology and innovation series funded by the National Innovation Awareness Strategy of the Commonwealth Department of Education, Science and Training.

The ten topics in the series (four of which were part funded by the CRC for Advanced Composite Structures, the Defence Science and Technology Organisation, the National Standards Commission, and the Victorian Department of Innovation, Industry and Regional Development) illustrate the diversity of technical applications in Australia – from synchrotrons to hydrogen cars.

Each *Nova* topic has key text, supplementary information on Australian research and applications, a glossary of terms, activities, further reading and links to other websites. Professor John McKenzie presented an overview of the technology topics at the annual general meeting of the Australian Foundation for Science.

*Nova* is held in high regard by teachers and students and continues

to grow in popularity. A major drawback regularly cited by users is the Academy's guarantee that information on the site is accurate and up-to-date.

A new topic on the site is 'Driver fatigue – an accident waiting to happen'. This is the sixth topic in a series on road safety sponsored by the NRMA–ACT Road Safety Trust. Telstra is the principal sponsor of *Nova*. The site can be explored at [www.science.org.au/nova](http://www.science.org.au/nova).

## National Committee guidelines

The Academy has 22 National Committees, each intended to foster an area of science, advise the Academy on relevant matters and provide links with international scientific bodies. The Academy Council has recently revised the guidelines for these committees; they are available at [www.science.org.au/natcoms](http://www.science.org.au/natcoms).

## Foundation annual meeting

The Australian Foundation for Science held its annual general meeting on 18 November. Mr John Ralph chaired the proceedings. The Emperor of Japan has recently conferred the Grand Cordon of the Order of the Sacred Treasure on Mr Ralph for his contribution to closer economic relations between Japan and Australia.

During the open session of the meeting Ms Marian Heard, on behalf of the Foundation, showcased recent developments in two of its projects – the education website, *Nova: Science in the news* (see separate item), and the *Video histories of Australian scientists* project.

Dr Jim Peacock introduced video interviews with the winners of the Prime Minister's three science prizes for 2002 – Professor Frank Fenner, Professor Marcela Bilek and Dr Joel Mackay. He said that the videos are a wonderful resource for raising awareness of Australia's scientific talent and achievement. More information on the project is available at [www.science.org.au/scientists](http://www.science.org.au/scientists).

## Review of Primary Investigations

In 2002 the Academy commissioned a review of its science, technology and environment program for primary schools, *Primary Investigations*. The review concluded that the program had made a significant contribution to primary science education. It recommended that the program be revised to build on its success.

Academy President, Dr Jim Peacock, and Secretary (Education and Public Awareness), Professor John McKenzie, will meet the Minister for Education, Science and Training, Dr Brendan Nelson, to discuss how revision of *Primary Investigations* could best meet the needs of Australian primary schools.



Dr Jim Peacock addresses a dinner of the Academy's Council and Sectional Committee Chairs at the Shine Dome on 6 February. Council member Professor Cheryl Praeger is to Jim Peacock's left.



In January 2003, the National Youth Science Forum (NYSF) once again held the opening lecture for each of its two sessions in the Shine Dome. The participants of Session B are pictured above. The NYSF is a two-week residential program for students who are about to start Year 12 and who are thinking about a career in science, engineering or technology. The Academy provided assistance with the mock job interview panels and Executive Secretary, Professor Sue Serjeantson, was guest speaker at the dinner.

Photo: David Reid

## Endangered species research awards

The Academy's Fund for the Conservation of Endangered Australian Vertebrate Species supports research to help understand the causes of species' decline, with a view to making conditions suitable for their recovery. Awards have recently been made to:

- Dr Mark Eldridge, Macquarie University, for a project on adaptive genetic variation in Australian island macropod populations.
- Dr Andrea Taylor, Monash University, for genetic marker studies of the endangered Leadbeater's possum.
- Professor Ross Crozier, James Cook University, for study of the conservation genetics and ecology of the Gouldian finch.

- Dr Alistair Glen, University of Sydney, for research into the competitive and predatory effects of the red fox on the spotted-tailed quoll.

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## Bob Squire award

The Australian College of Educators, in association with the Australian Science Teachers Association and the Academy, has set up the Bob Squire Annual Award for Excellence in Science Teaching. Further information is available at [www.science.org.au/squireguidelines.pdf](http://www.science.org.au/squireguidelines.pdf).

## Kanagawa awards

For some years the Kanagawa Museum of Natural History in Japan has funded awards to support research into the Precambrian history of life in Western Australia.

The recipients of the latest awards are Dr Paul Hearty, James Cook University, who will study coastal sedimentary dynamics in the Shark Bay region, and Dr Brendan Burns, University of New South Wales, who will look at survival strategies and dynamics of stromatolite-associated microbes at Hamelin Pool.

The Kanagawa fund is now exhausted.

# Workshop on quantum computing

The first of two workshops between the Academy and the US National Science Foundation was held in Sydney from 7 to 10 January 2003. The workshop was on solid state and optical approaches to quantum information science. This is where the quantum states of particles are used to store and process data.

The 64 participants were mostly

postdoctoral researchers and PhD students from Australia and the United States. The Minister for Science, Mr Peter McGauran, met participants during lunch on 9 January.

The workshop was funded by the National Science Foundation and the Commonwealth Department of Education, Science and Training, with the aim of increasing collaboration

between young researchers in the two countries. The convenors of the event were Professor Bob Clark from the University of New South Wales and Professor Birgitta Whaley from the University of California, Berkeley.

The next workshop, on nanotechnology, will be held in the US in July 2003.



Workshop participants, Newport, Sydney.

## Collaborations with France

The Academy and the French Embassy have been working together to support Australian researchers to travel to France through the Academy's Europe Exchange Program and the Embassy's Call for Projects.

In 2002 the Academy and the Embassy each supported the visits of 12 scientists to France and co-supported an additional three visits. In 2003 the Academy will be sponsoring 13 scientists to undertake collaborative research with colleagues in France and the Embassy will fund seven researchers.

Members of the Academy's Europe Exchange Committee have also assisted the Embassy by providing their expertise in evaluating the applications that the Embassy has received under its Call for Projects. The Academy will also be managing three exchange programs for the French Embassy in 2003.

## Oxford Nuffield Medical Fellowship

The Academy is calling for applications on behalf of the University of Oxford for a fellowship in a clinical medicine or medical science department of the University. The closing date is 16 May 2003. Further information is available at [www.science.org.au/awards/nuffield.htm](http://www.science.org.au/awards/nuffield.htm).

# International exchanges

Under its international exchange programs, which include programs of the Commonwealth Department of Education, Science and Training, the Academy has selected 102 scientists to travel from Australia to carry out research in an overseas country. Thirty scientists will go to Europe, 54 to Asia and 18 to North America.

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).

## Europe

Dr Leanne Armand (University of Tasmania), will go to the Université de Bordeaux, France.

Dr Graham Baldwin (University of Melbourne), Université Montpellier, France.

Dr Carole Burrow (University of Queensland), Muséum National d'Histoire Naturelle, France.

Professor David Day (University of Western Australia), French Institut National de la Recherche Agronomique.

Dr Kevin Downard (University of Sydney), University of Warwick, England.

Professor Ken Freeman (Australian National University), Universität Basel, Switzerland.

Dr John Gallant (CSIRO Land and Water, Canberra), French Institut National Agronomique Paris-Grignon

Dr Georg Gottwald (University of Sydney), Imperial College London.

Dr Mark Humphrey (Australian National University), Université de Rennes, France.

Dr Vadim Kamenetsky (University of Tasmania), Max-Planck-Institute for Chemistry, Germany.

Dr Cameron Kepert (University of Sydney), Institut de Physique et Chimie des Matériaux de Strasbourg, France.

Dr Sagiv Kolkovski (Fisheries Western Australia), Universidade do Algrave, Portugal.

Professor Eddie Leonardi (University of New South Wales), Université de Limoges, France.

Dr Andrew McDonagh (University of New South Wales), University of Leuven, Belgium.

Dr David Miller (James Cook University of North Queensland), Universität Basel, Switzerland.

Dr Dragomir Neshev (Australian

National University), Westfälische Wilhelms – Universität Münster, Germany.

Dr Mark Peoples (CSIRO Plant Industry), Institut National de la Recherche Agronomique, France.

Dr Sergei Pisarevsky (University of Western Australia), Lund University, Sweden.

Dr Burkard Polster (Monash University), Universiteit Gent, Belgium.

Dr Zdenko Rengel (University of Western Australia), Institut National de la Recherche Agronomique, France.

Dr John Roberts (University of New South Wales), University of London.

Professor Claude Sammut (University of New South Wales), Université de Versailles, France.

Associate Professor Igor Shparlinski (Macquarie University), Oxford University.

Dr Robert Stamps (University of Western Australia), University of Ferrara, Italy.

Dr Martin Steinbauer (CRC for Sustainable Production Forestry), Institut National de la Recherche Agronomique, France.

Dr Heiko Timmers (Australian Defence Force Academy), Lund University, Sweden.

Dr Christopher Tisdell (University of Queensland), Université de Louvain, Belgium.

Dr Erik Wapstra (Macquarie University), University of Gotenburg, Sweden.

Dr Edeline Wentrup-Byrne (Queensland University of Technology), Université Montpellier II, France.

Dr Yao-zhong Zhang (University of Queensland), University of York, England.

## Asia

### China

Dr Zheng Li (University of Wollongong), Chinese Academy of Sciences.

Dr Jill Slay (University of South Australia), Chinese Academy of Sciences.

Dr Susan Turner (Queensland Museum), Chinese Academy of Sciences.



A French-Australian delegation on scientific cooperation on agriculture, land, water and the environment visited Canberra from 25 to 29 November. Members of the delegation were from CIRAD, INRA and CNRS and they met with representatives of major Australian research organisations. The Academy hosted a public lecture at the Shine Dome, with presentations by members of the group. The Minister for Science, Mr Peter McGauran, also met with the French delegates. Pictured, from left, are Mr Alain Moulet from the French Embassy, Dr Jean-Pierre Décor, Professor Daniel Nahon, Mr Peter McGauran and Professor Kurt Lambeck.



Associate Professor Jingling Xue (University of New South Wales), Chinese Academy of Sciences.  
 Dr Grant Zhu (Central Queensland University), Chinese Academy of Sciences.

**Korea**

Dr Jorge Beltramini (University of Queensland), Korea Institute of Chemical Technology.  
 Dr David Burgner (Children's Hospital Medical Centre, University of Western Australia), Seoul National University Children's Hospital.  
 Dr Christopher Davis (University of Melbourne), Sang Myung University.

**Taiwan**

Associate Professor Robert Flower (Royal North Shore Hospital), Mackay Memorial Hospital.  
 Dr Daphne Huang (National Research Centre for Environmental Toxicology), Taipei Medical University.  
 Associate Professor Richard Huggins (La Trobe University), National Tsing Hua University.  
 Dr Hemanshu Pota (Australian Defence Force Academy), National Chiao-tung University.  
 Dr Chi-Hsiang Wang (CSIRO Manufacturing and Infrastructure Technology), National Center for Research on Earthquake Engineering.

**Japan – bilateral programs**

Dr Sharon Allen (University of Tasmania), Niigata University.  
 Dr Besim Ben-Nissan (University of Technology Sydney), Kyoto Institute of Technology.  
 Dr Walter Dunlap (Australian Institute of Marine Science), University of Tokyo.  
 Dr Gilles Guillemin (St Vincent's Hospital), Kyoto and Hokkaido Universities.  
 Professor Goen Ho (Murdoch University), Kyoto University.  
 Dr Joseph Hoh (University of Sydney), Jikei University.  
 Dr Simon Lawson (Queensland Forestry Research Institute), Forestry and Forest Products Research Institute.  
 Dr Robert Moon (University of New South Wales), Kyoto Institute of Technology.  
 Dr Ahmed Regina (CSIRO Plant



The University of New South Wales at the Australian Defence Force Academy (ADFA) and Toyama University recently signed a cooperative agreement for scholastic exchange. The cooperative agreement follows several years of joint research publications between the Nuclear Magnetic Resonance on Oriented Nuclei group at ADFA and the Toyama group. The Academy, with the support of the Commonwealth Department of Education, Science and Training, and the Japanese Society for the Promotion of Science have sponsored research visits by Dr Wayne Hutchison and Dr Katsuhiko Nishimura.

Pictured, clockwise from top left, are Dr Joseph Lai and Dr Krishna Shankar, School of Aerospace and Mechanical Engineering, ADFA; Dr Don Chaplin, School of Physics, ADFA; Professor Robert King, Rector of ADFA; Dr Katsuhiko Nishimura, Faculty of Engineering, Toyama University; and Dr Wayne Hutchison, School of Physics, ADFA.  
 Photo: UNSW/ADFA

Industry), Akita Prefectural University.

Dr Alan Richardson (CSIRO Plant Industry), Nara Women's University.  
 Dr Andrei Rode (Australian National University), University of Tokushima.  
 Dr Virginia Shepherd (University of New South Wales), Himeji Institute of Technology.  
 Professor Istvan Toth (University of Queensland), Kobe Gakuin University.

**Japan – Invitation Fellowship, short term**

Professor John Black (University of New South Wales), Nagoya University.  
 Dr Liang Cheng (University of Western Australia), Kyoto Institute of Technology.  
 Professor John Clement (University of Melbourne), Tsurumi University.

Professor Maxwell Crossley (University of Sydney), Osada University.

Professor Clive Fraser (University of Melbourne), Geographical Survey Institute.  
 Professor Tony Milne (University of New South Wales), National Space Development Agency of Japan.

Professor Chris Rizos (University of New South Wales), National Aerospace Laboratory.

Dr Krishnakumar Shankar (University of New South Wales), Fukuoka Industrial Technology Center.

**Japan – Invitation Fellowship, long term**

Associate Professor Yurek Kulski (Centre for Bioinformatics and Biological Computing, Murdoch University), Tokai University.

*Japan – postdoctoral fellowship*

Dr Adil Asad (University of Queensland), Kyoto University.

Dr Jamie Case (St George Hospital), Kyoto Prefectural University of Medicine.

Dr Gongfa Chen (University of Southern Queensland), Building Research Institute.

Dr Alan Cornell (University of Melbourne), Kyoto University.

Dr Daniel Dunkley (Nagoya University), National Institute of Polar Research.

Dr Timothy Farrell (NSW Agriculture), National Agricultural Research Center for Tohoku Region.

Dr Anthony Kiem (University of Newcastle), Yamanashi University.

Dr Mu Luo (Curtin University of Technology), Kyoto University.

Dr Stephen McNabb (Australian National University), Kobe Pharmaceutical University.

Dr William McPhee (University of Queensland), National Institute for Materials Science.

Dr Jeremy Preston (La Trobe University), Institute of Physical and Chemical Research.

Dr Mark Rogers (Monash University), University of Tokyo.

Dr David Ross (University of Adelaide), Tokyo University of Agriculture and Technology.

Dr Scott Rowan (University of Queensland), National Aerospace Laboratory.

Dr Ilkunur Tulunay (University of Sydney), Sophia University.

Dr Krishna Uprety (University of Wollongong), Kyushu Institute of Technology.

Dr Stephanie Wallace (NSW Environmental Protection Authority), National Institute for Land and Infrastructure Management.

Dr Stuart Yates (University of Adelaide), Tohoku University.

Dr Renfu Shao (University of Queensland), Fukuyama University.

## North America

Dr Gavin Begg (James Cook University), National Marine Fisheries Service, USA.

Dr Hubert Chanson (University



Professor Joseph Connell, a Corresponding Member of the Academy, visited in December. A morning tea, attended by Dr Jim Peacock, right, Professor Ralph Slatyer, left, and other Fellows, was held to mark his signing of the Charter Book. Professor Connell, from the University of California, Santa Barbara, is a noted ecologist who has studied a number of rainforests in Australia, most notably in Lamington National Park. He spoke of his research and remarked that he felt his best and happiest work on rainforests had been carried out in Australia.

of Queensland), McGill University, Canada.

Dr Shin-ho Chung (Australian National University), Yale University, USA.

Associate Professor Geoffrey Dobson (James Cook University), Johnson Emory University, USA.

Dr William Foley (Australian National University), Texas A&M University.

Associate Professor Robin Gasser (University of Melbourne), Harvard Medical School.

Dr Christopher Grof (CSIRO Plant Industry), University of Minnesota.

Dr Wieslaw Krolkowski (Australian National University), University of Wisconsin-Madison, USA.

Dr Prakash Lakshmanan (Bureau of Sugar Experiment Stations), University of Central Florida.

Dr Geraint Lewis (University of Sydney), California Institute of Technology.

Dr Paul Norbury (University of Melbourne), University of California.

Dr Jairo Palta (CSIRO Plant Industry), CIMMYT, Mexico.

Dr Jacqueline Phillips (Murdoch University), Wright State University, USA.

Professor Peter Robinson (University of Sydney), Florida Atlantic University.

Dr Maitreyee Roy (University of Sydney), National Research Council, Canada.

Associate Professor Paul Southgate (James Cook University), Centro de Investigaciones Biologicas del Noroeste, Mexico.

Dr Xiaolin Wang (University of Wollongong), Ohio State University.

Dr Ying-ping Wang (CSIRO Atmospheric Research), Carnegie Institution of Washington.

# Honours to Fellows

The City of Prague and Charles University has awarded the International Charles IV Prize to **Professor John Kerr**, University of Queensland, for his research on programmed cell death and its impact on immunology, biochemistry and medical ethics. The prize, which is awarded every two years to a person distinguished in science, politics or culture, was presented on 13 November 2002 in Prague.

**Professor David Henry Solomon** has been awarded the 2002 R K Murphy Medal. The most prestigious award made by the Industrial Chemistry Division of the Royal Australian Chemical Institute, it is for achievement in process chemistry, chemical engineering or related areas within the chemical industry.

## Australia Day honours

**Professor Chris Heyde**, Australian National University, was awarded the Medal of the Order of Australia (AM) in the Australia Day honours list. The award was for service to mathematics, particularly through research into statistics and probability, and to the advancement of learning in these disciplines.

**Emeritus Professor Angus Hurst**, University of Adelaide, received the AM for service to science, particularly in the field of mathematical physics, as an educator, researcher and administrator.

## Biographers

Memoirs of deceased Fellows are published in *Historical Records of Australian Science*. The biographers for **Professor Bernhard Neumann** are Professor Cheryl Praeger, Dr Mike Newman and Professor Martin Taylor.

Information about *Historical Records of Australian Science* is available at [www.publish.csiro.au/journals/hras/](http://www.publish.csiro.au/journals/hras/).



*Professor Fiona Stanley*

## Australian of the Year

The Director of the Telethon Institute for Child Health Research in Perth, **Professor Fiona Stanley**, is Australian of the Year for 2003. Professor Stanley has been interviewed as part of the Academy's Video Biographies. An edited transcript is available at [www.science.org.au/scientists/fs.htm](http://www.science.org.au/scientists/fs.htm).

## Federation Fellowships

The Commonwealth Government has awarded four of its Federation Fellowships to Fellows of the Academy. The awards have been made to:

- **Professor Bruce Kemp**, Deputy Director of St Vincent's Institute of Medical Research in Melbourne, for his research program on how organisms coordinate energy supply and demand.
- **Dr Richard Manchester**, CSIRO Australia Telescope National Facility in Sydney, for his research program on precision pulsar timing and its applications.
- **Professor Gerard Milburn**, Centre for Quantum Computer Technology at the University of Queensland, for his research into the principles of quantum nanotechnology.
- **Professor Marilyn Renfree**, Head of the Department of Zoology at the University of Melbourne, for her research program, 'Genes to phenotype: exploiting the marsupial model'.

# Eccles centenary

The John Curtin School of Medical Research at the Australian National University held a symposium on 27 January to celebrate the centenary of the birth of Sir John Eccles. Eccles was born in Victoria and died in Switzerland in 1997.

He was a foundation Fellow of the Academy and its second President (1957–1961). He held the Chair of Physiology in the John Curtin School from 1951 to 1966 and is internationally recognised for his outstanding and remarkable contributions to the neurophysiology of the central nervous system of mammals. He won the Nobel prize for physiology or medicine in 1963.

The symposium began with brief presentations by six of his collaborators in Canberra, followed by presentations by two scientists who worked with him later in the USA. The afternoon session included presentations by seven younger neuroscientists working at the John Curtin School and one from Sydney whose research is related to Eccles' discoveries on synaptic transmission and neuronal integration.

A number of members of his family



*Sir John Eccles in 1961*

were present, including his daughter, Dr Rosamond Mason, who worked with him in Canberra. During the day she unveiled a plaque on the 'temporary' building which housed his laboratories for four years from 1953.

More information about Eccles' life and work is available at [www.science.org.au/academy/memoirs/eccles.htm](http://www.science.org.au/academy/memoirs/eccles.htm).

## Mt Stromlo fires

The bushfires around Canberra in January took a serious toll on Australian astronomy and its heritage. The Mount Stromlo observatory, which was surrounded by pine plantations, was ravaged by fire. Five telescopes, the equipment workshop, several houses and an administration building were destroyed.

Academy President, Dr Jim Peacock, said, 'The Academy has close links with the Mount Stromlo observatory and I am shocked at the extent of the damage there.'

The Australian National University has set up a website at [www.anu.edu.au/fires/](http://www.anu.edu.au/fires/). It includes photographs of the devastation together with information on how to help with the rebuilding of the observatory.



Fire on Mount Stromlo, 18 January 2003. Photo: Anthony Millgate



The 50-inch telescope. Photo: Matthew Colless



Interior of the Yale-Columbia telescope. Photo: Matthew Colless

## Conservation study of endangered broad-headed snake

The broad-headed snake, *Hoplocephalus bungaroides*, was once common throughout the Sydney region. Now it is Australia's most endangered snake.

A study supported by the Academy's Fund for the Conservation of Endangered Australian Vertebrate Species has found the snake in only one of nine national parks around Sydney. The snakes live under loose rocks on sandstone plateaus. One of the reasons given for their rapid decline over the

last 30 years is the removal of bush rocks for city gardens.

That may not be its only problem. The leader of the study, Dr Jonathan Webb from the University of Sydney, suspects that vegetation overgrowth may have contributed to the decline. The overgrowth, possibly caused by changes to fire regimes, makes rocks on the eastern sides of plateaus too shady and cold for the snakes. Dr Webb suggests that managers need to

consider burning and tree lopping to create habitat suitable for the broad-headed snake and other reptiles.

Habitat restoration has already taken place at Yengo National Park, north of Sydney. Monitoring of restored sites will take place to see if the work has been successful.

Further studies will look at the genes of surviving snakes to see whether the snakes can move between fragmented landscapes.