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The Science of Immunisation: Questions and answers

PHOTO: AUSTRALIAN MEDICAL ASSOCIATION

Suzanne Cory and AMA President Steve Hambleton launch *The Science of Immunisation: Questions and answers*

The Academy's publication *The Science of Immunisation: Questions and answers* was launched by the Academy's President Suzanne Cory and Australian Medical Association (AMA) President Dr Steve Hambleton at the North Sydney clinic of Dr Brian Morton, Chair of the AMA's Council of General Practice.

The publication is based on six key questions that aim to address confusion and community concern surrounding the science of immunisation. It explains how immunisation works, the content of vaccines, and the short- and long-term health benefits. The document goes on to describe how and why immunisation is effective and concludes with a look at future opportunities for vaccines and immunisation.

The 16-page illustrated publication is the result of more than 1500 hours of work by the Working Group and the Oversight Committee of Academy Fellows and other Australian scientists with internationally recognised expertise in immunisation. Work started on the document in late 2011. It is the second in the Academy's series of Questions and Answers publications.

A large number of television, radio and press interviews were conducted during the launch week by Professor Cory AC PresAA FRS, Professor Ian Frazer AC FAA FRS FTSE, Sir Gus Nossal AC CBE FAA FRS FTSE, Professor Tony Basten AO FAA FTSE, Dr Hambleton and Dr Morton.

Media coverage of the launch was extensive, with more than 200 television, radio and print articles. All public television networks covered the publication's release in their evening news bulletins, as well as Sunrise, The Morning Show, ABC 24 News Breakfast, and The Project. *The Daily Telegraph* published a series of major articles and supportive editorials and op-eds were published in a number of daily newspapers.

The overwhelmingly positive mainstream media reporting of the Academy's publication was matched by strong online coverage, in traditional media such as News Ltd and Fairfax sites, science and academic sites including **www.theconversation.edu.au**, and parenting blogs such as **mamamia.com.au** and **essentialbaby.com.au**.

Since the publication's release, the Academy has responded to requests for printed copies from schools, daycare centres, local area health authorities, GP clinics, hospitals and concerned members of the public. Discussions are currently underway with the AMA to distribute copies to its members. There were an extraordinary 800 000 views of the publication online in the first two months of its release.

The document is available at **www.science.org.au/policy/immunisation**

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Future Lindau funding secured SEE PAGE 4

Message from the President

The Academy is poised for a busy and exciting federal election year. Having ended 2012 with a range of successful publications and public education campaigns, we have set the scene to ensure that science is a high priority for all parties as the nation marches towards the September election.

A scientifically literate community

Our important new booklet *The Science of Immunisation: Questions and answers* justly received significant media and public attention, capturing the opinion pages and talkback airwaves for weeks after its launch. Almost one million copies have been downloaded or ordered in hard copy. *The Science of Climate Change: Questions and answers* has also been accessed by more than 700 000 readers. The popularity of the Questions and Answers series is a resounding confirmation that the Australian public is thirsty for sound science to underpin national debate and inform personal decisions.

Guiding science

Also well received in December were the *Physics Decadal Plan 2012–2021: Building on excellence in physics* and the *National Nanotechnology Research Strategy*. These roadmaps will help guide two important and rapidly shifting disciplines now and into the future.

These plans and others like them are part of a broader Academy strategy to support excellent science, to help increase scientific literacy in the broader community, and to ensure Australia supports and grows its innovation economy.

National Committees have also been busy bringing science to a broader audience; most notably with the very successful *Ticking Time Bombs Earth System Outlook Conference* at the Shine Dome and the *Bragg Centennial Symposium* in Adelaide.

Federal Budget

Whatever economic situation the Government faces as it approaches the Federal Budget in May — and whatever situation the nation faces as it approaches the election — it is indisputable that Australia must have a scientifically literate population with high skills, and with the ability to compete internationally in scientific research and tertiary education. But support for Australian science and science education is far wider and more crucial than a simple focus on research and tertiary education; strategic support for science is central to our nation's future.

In its pre-Budget submission to Treasury, the Academy has identified seven priority areas:

- Long-term strategic investment in Australian science
- Enhanced development and utilisation of our talented research workforce
- Further investment in science and maths teaching
- Augmentation of international science linkages
- Ongoing investment in major national research infrastructure
- Provision of indirect research costs
- Improvement of research productivity by reduction of the administrative burden.

Education

Our education programs are going from strength to strength. *Primary Connections* has developed seven new units and won the Education category of *The Australian*'s 2012 Innovation Challenge Award.

Meanwhile, *Science by Doing* is trialling its seven innovative online curriculum units in 28 secondary schools across Australia. These fun and interactive units will be available to explore during *Science at the Shine Dome*: I encourage you to try them out!

International

I am delighted to report that the Science and Industry Endowment Fund (SIEF) has agreed to support the Academy's initiative to send bright young Australian researchers to the Nobel Laureates' meeting in Lindau, for the next eight years. This is just one of a range of initiatives undertaken by the Academy to foster international connections and collaborations. When these connections are made at the start of a research career, they can lead to surprising and significant results to the benefit of all nations involved, and can sometimes spark lifelong research partnerships.

Suzanne Cory

We've also selected a small group of young Australian researchers to travel to Japan 26 February – 2 March to meet Nobel Laureates and other pioneering scientists at the *HOPE* meeting at the Japan Society for the Promotion of Science.

Early career researchers

The Academy's been busy supporting the career development and tapping into the brainpower of young researchers in Australia as well as abroad.

Late in 2012 we brought 70 early career researchers together in Sydney for the Academy's biennial Theo Murphy Frontiers of Science meeting — focusing on *Science for a Green Economy*.

We also appreciated the South Australian Minister for Science and Information Economy launching the recommendations of the 2012 Think Tank, *Shaping a Vision for our Future*, at a well-attended event in Adelaide.

The Australian Early and Mid Career Researcher Forum has continued its good work to address career issues for

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young researchers and to work with the Academy to ensure science underpins policy formulation. I welcome the forum's new members and extend my sincere gratitude to departing members, Andrew Brooks, Michelle Dunstone and Rosemary Keogh.

Celebrating science

You will be aware that the Academy has now opened applications for our prestigious annual career and early career awards and medals. I encourage you to make nominations for the career awards, and to pass on information about early career awards to your research associates.

Registration has now opened for *Science at the Shine Dome*, being held this year from 29–31 May. Please ensure you register to attend: I look forward to seeing you there.

Vale

Finally, I am saddened to report that since I last wrote to you we have lost three colleagues: John Moore, Jim Morrison and Alan Reid. On behalf of the Academy I offer their families my sincere condolences.

Professor Suzanne Cory AC PresAA FRS

FIFTH HOPE MEETING

Six Australian PhD and postdoctoral students were selected by the Academy's National Committees to attend the *Fifth HOPE Meeting of the Japan Society for the Promotion of Science* in Tokyo between 26 February and 2 March 2013. The title '*HOPE*' signifies the promise of young scientists and optimism for a bright science and technology future. The 2013 theme is life sciences and related fields. During the meeting, the students will be able to engage in interdisciplinary discussions with Nobel Laureates and other distinguished scientists pioneering the frontiers of knowledge.

Building on excellence in physics

On 6 December 2012 the physics community celebrated the launch of the *Physics Decadal Plan 2012–2021: Building on excellence in physics*. The document, launched by Nobel Laureate Professor Brian Schmidt FAA, presents the Australian physics community's strategic vision for the 10 years from 2012 to 2021.

The plan was prepared by a working group of experts tasked by the Academy's National Committee for Physics and chaired by Professor David Jamieson of The University of Melbourne. From 2012, the plan will be carried forward by the National Committee under the Chairmanship of Professor Hans Bachor of the Australian National University.

Physics is a fundamental science underpinning many disciplines, and crossing the boundaries of chemistry, biology, engineering and medicine. It provides fundamental understanding and new tools for advances in all aspects of science and technology. It builds capacity for new industries and business. Recent examples include enhanced biomedical imaging techniques and cancer treatments, faster and more secure communication, solar cells and organic photovoltaics, alternative energy and smart power systems, nanotechnology and advanced materials, better sensors to find water and minerals, and enhanced models to predict disruptions of our global ecosystem.

Excellent physics literacy is a vital prerequisite for facing the big challenges of the future. There are Australian physicists in academic institutions, laboratories and industries around the globe. As recent achievements show, Australia has the ability to contribute first-class physicists and other scientists.

The plan aims to ensure that the process of strategic investment in teaching and research in physics in Australia continues for the next 10 years, allowing Australia to build on present excellence, to remain a strong member of the world's physics community and to enjoy the associated intellectual, economic and social rewards.

The Australian Academy of Science, the Australian Institute of Physics, the Australian Research Council and the physics community combined resources to create this plan for the future of physics.

The decadal plan and further information are available at **www.science.org.au/natcoms/physicsdecadalplan.html**

Members of the physics decadal plan working group with Suzanne Cory

International news

FUTURE LINDAU FUNDING SECURED

The inspiring *Lindau Nobel Laureate Meetings*, held annually in Germany since 1951, introduces Nobel Prize winners in chemistry, physiology, medicine and physics to younger generations of scientists. From 2004 to 2012 the Academy supported approximately seven young Australian researchers to attend each year accompanied by a member of Council of the Academy.

The Academy is delighted to announce that for eight years from 2013, the Science and Industry Endowment Fund (SIEF) will provide SIEF-AAS Fellowships for up to 10 Australian-based early career scientists in specialist discipline years and up to 15 in multidisciplinary years. Funding will also be available for a member of Council or prominent senior Australian scientist to accompany the delegation.

The SIEF-AAS awards include full accommodation and registration costs as well as funding for international travel. Awardees will also be sponsored by the Academy to participate in the Early Career Researchers Program at the *2013 Science at the Shine Dome*, where they will have the chance to meet some of Australia's most highly regarded scientists and attend a pre-meeting briefing to help them make best use of opportunities presented by the Lindau meetings.

SCIENCE AND INDUSTRY ENDOWMENT FUND

MEETINGS OF NOBEL LAUREATES LINDAU

Andrew Holmes at the 2009 *Meeting of Nobel Laureates* in Lindau PHOTO: ADAM BROTCHIE

ADAM J BERRY MEMORIAL FUND

Mr Bowen Dempsey from Macquarie University has received the 2013 Adam Berry Fund award. The award will assist Mr Dempsey to undertake research on mapping the connectome that controls breathing, at the National Institute of Neurological Disorders and Stroke, for 13 weeks. The fund is co-managed on behalf of the Berry family by the Academy and the Foundation of the National Institutes of Health in the US. Further details and photos of previous recipients of the award can be found at **www.science.org.au/internat/americas/berry-participants.html**

Young Australian scientists to attend 2013 meeting

A delegation of up to 10 outstanding young Australian scientists will attend the 2013 meeting of Nobel Laureates in Lindau in June–July 2013. They join an elite group of around 500 students selected from all over the world who will meet with Nobel Prize winners in the field of chemistry.

Jacinta Delhaize, a PhD candidate at the International Centre for Radio Astronomy Research who attended the 2012 meeting, said that it was a fantastic experience and a once-in-a-lifetime opportunity: 'I was inspired in so many ways, gained a better education of important issues in science and I now feel well and truly connected to the international scientific community and very proud to be part of it,' she said. 'Another great aspect was meeting the Laureates themselves,' said Andy McCulloch of The University of Melbourne, who also attended the 2012 meeting. 'Most days we had lunch with one or more Laureates. It was great to just talk. I think one of the more entertaining discussions concerned the trials and tribulations that occurred at the ceremony while receiving the Nobel Prize, along with hearing about the discovery of C60 [one of the 'fullerenes', a group of naturally occurring carbon molecules].'

InterAcademy Panel General Assembly and Conference

The Academy's Foreign Secretary, Professor Andrew Holmes AM FAA FRS FTSE, attended the InterAcademy Panel (IAP) General Assembly and conference in Rio de Janeiro, Brazil, 24–27 February 2013. The conference topic was 'Grand Challenges and Integrated Innovations: Science for poverty eradication and sustainable development'.

Ms Shelley Peers, Project Director of *Primary Connections*, was also invited to attend and delivered a presentation on inquiry-based science education at the conference.

The Academy will host the next meeting of the IAP Executive Committee in Canberra in October 2013.

Early and mid career researchers

Launching the 2012 Think Tank recommendations

Launch of the recommendations from the *2012 Theo Murphy High Flyers Think Tank on Australia's Population: Shaping a vision for our future*

The recommendations from the *2012 Think Tank* were launched by Mr Tom Kenyon, the South Australian Minister for Science and Information Economy and Co-chair of the Think Tank Dr Kristin Alford, on 6 December 2012 at the Science Exchange in Adelaide. Early and mid career researchers based in Adelaide who took part in the *Think Tank* attended. A *Think Tank* suggestion to give a health tax rebate to those who undertook exercise attracted attention in the local media. The *Think Tank* recommendations can be found at **www.science.org.au/events/thinktank/thinktank2012/documents/thinktankRecommendations2012.pdf**

SHIPSHAPE DOME

The Academy's facilities manager Peter Geerdink tells us that workmen have now completed the installation of fire dampers and a special firewall and fire-rated emergency exit door in the basement of the historic Shine Dome in Gordon Street where the Academy archives and library stocks are stored. The work ensures that the Dome complies with current standards for fire safety.

NEW *PRIMARY CONNECTIONS* UNITS

Primary Connections has developed seven new units for teachers, fully aligned to the Australian curriculum.

Three new units are due out in Term 2, 2013 on: Earth and space sciences (Year 3), physical sciences (Year 4) and biological sciences (Year 4); and four new units were released in December 2012 on physical sciences (years 1, 5 and 6) and chemical sciences (Year 5).

For more *Primary Connections* news including market research, awards and professional learning, see page 13.

EMCR Forum

Welcome to the four new members of the Early and Mid Career Researcher Forum! Dr Maggie Hardy, Dr Kate Hoy, Dr Oliver Jones and Dr Sharath Sriram (pictured left to right) joined the forum committee in January 2013, replacing Dr Andrew Brooks, Dr Michelle Dunstone and Dr Rosemary Keogh who have stepped down. Committee members for 2013 are listed in the table below. The second national meeting of the forum, *Science Pathways 2013*, will be held in Melbourne in October with a theme of 'Engaging EMCRs with industry and innovation'.

NAME	AFFILIATION
Marguerite Evans-Galea (Chair)	Murdoch Children's Research Institute, Bruce Lefroy Centre for Genetic Health Research
Darren Saunders (Deputy Chair)	University of NSW, Garvan Institute of Medical Research
Krystal Evans (Deputy Chair)	Walter and Eliza Hall Institute, Division of Infection and Immunity
Raelene Endersby	Telethon Institute for Child Health Research, Division of Leukaemia and Cancer Research
Margaret Hardy	University of Queensland, Institute for Molecular Bioscience
Kate Hoy	Monash University, Psychiatric Neurotechnology
Giampiero Iaffaldano	Australian National University, School of Earth Sciences
Oliver Jones	RMIT University, School of Applied Sciences
Andrew Siebel	Baker IDI, Heart and Diabetes Institute
Sharath Sriram	RMIT University, Electrical and Computer Engineering
James Tickner	CSIRO, Process Science and Engineering

Early and mid career researchers continued from page 5

SCIENCE FOR A GREEN ECONOMY

A green economy is one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. The 2012 Theo Murphy Australian Frontiers of Science meeting *Science for a Green Economy* was held in Sydney on 2–4 December 2012. Seventy outstanding early and mid career scientists from around Australia were brought together to discuss advances in their fields and possible cutting-edge collaborations. The two and a half day event was supported by the Theo Murphy (Australia) Fund and comprised poster and presentation sessions, including panel forums, on a diverse range of topics across the biological, physical and social sciences. The talks were organised as a series of themed sessions on topics ranging from 'Agriculture and aquaculture — nutrients and nutrition' to 'Social sciences — behavioural changes at individual, organisational and government scales'.

Commercialising conversion of organic waste to energy, achieving lowest cost transfer to renewables and using alternative aviation fuels from gas and biomass feedstock were among the emerging innovative technologies discussed at the conference. The panel forum on the question 'What motivates people to act in support of pro-environmental policies?' was mentioned as a highlight of the event by most of the participants, providing an inspiring and challenging context to their research.

Participants appreciated the broad context of the meeting and the way in which it allowed participants to grasp how science applies to the real world via specific policies or the direction of the economy. Many participants indicated that the meeting was of immense help in giving a better sense of their research landscape and allowing them to be more confident to engage outside their traditional circles.

More information about the program is available at **www.science.org.au/events/frontiers/frontiers2012/index.html**

Science for a Green Economy, Sydney, December 2012

Visit of UK Royal Society President

In January 2013 Nobel Laureate and President of the Royal Society of London Sir Paul Nurse visited Australia on a return visit from Antarctica. During his short time in Australia (19–21 January 2013) Sir Paul met with about 60 Fellows of the Royal Society and the Australian Academy of Science in Canberra and Melbourne. He hosted town hall style meetings to discuss what the role of the Royal Society should be as a Commonwealth Academy of Science, as well as how best to treat Fellows who live overseas.

On 21 January the Academy and The University of Melbourne co-hosted a thought provoking lecture by Sir Paul entitled 'Making science work'. This standing-room only lecture was recorded by Robyn Williams FAA and replayed in its entirety on Radio National's Science Show, on 16 February 2013. The full text of his speech is available on the Academy's website at **www.science.org.au/events/documents/Sir_Paul_Nurse_Jan_2012.pdf**

News from National Committees

Antarctic research

Chair: Dr Dana Bergstrom

The committee has made a submission to the Review of the Australian Antarctic Science application process. It can be viewed at **www.science.org.au/natcoms/nc-antarctic.html**.

Astronomy

Chair: Professor Stuart Wyithe

Outgoing Chair Professor Elaine Sadler FAA handed over to Professor Stuart Wyithe at the December committee meeting at Ian Potter House. The committee discussed a report from Astronomy Australia Limited, the National Committees review, International Astronomical Union matters, the Square Kilometre Array site decision and next steps, and Australian Square Kilometre Array Pathfinder progress and timelines. Preparations for the next Astronomy decadal plan (2016–25) will be a major focus in the short- and medium-term. The Australian National Institute for Theoretical Astrophysics has produced a Strategic Plan for Theoretical Astrophysics as an outcome of the Australian Astronomy Decadal Plan mid-term review.

Biomedical sciences

Chair : Professor Ian Dawes FAA

The committee is highly supportive of the Collaborative Universities Biomedical Education Network (CUBEnet), a tertiary-level biomedical education network that brings academics together to develop a sustainable framework for a program-wide approach to the biomedical curriculum.

Following on from CUBEnet's launch and the inaugural *National Forum on Education in the Biomedical Sciences* at the Shine Dome in December 2011, the committee supported a second forum under the Academy's National Committees Initiatives Fund: *Ahead of the game: preparing our biology and biomedical graduates for the future*, held at the University of Sydney in December 2012.

This successful event was attended by about 100 educators and combined the resources and insights of CUBEnet with those of both the Quantitative Skills and Vision, and Innovation in Biology Education networks. The forum was opened by Professor Steve Simpson FAA and facilitated by Dr Norman Swan of ABC Radio National.

More information about CUBEnet may be found at **www.cubenet.org.au**

Crystallography

Chair: Professor Mitchell Guss

Both the Executive Committee of the International Union of Crystallography and the National Committee for Crystallography met during recent conferences in Adelaide. The combined Asian Crystallographic Association/Society for Crystallography in Australia and New Zealand conference on 2–6 December was followed by the Bragg Centennial Symposium (described on page 9).

The committee is planning for the United Nations International Year of Crystallography in 2014. In addition, it is helping to organise the 2015 *Science at the Shine Dome* symposium to commemorate the conferring of the Nobel Prize on Sir Lawrence Bragg and his father Sir William Bragg. It welcomed the new funding and management arrangements for the Australian Synchrotron involving ANSTO, which provide a firm basis for future development of the facility.

Earth system science

Chair: Dr Roger Gifford

In addition to organising the *Ticking Time Bombs* Outlook conference (see page 9), committee members also discussed the importance of funding Australian multidisciplinary research (such as that undertaken in Earth system science) in meetings with the Chief Scientist Professor Ian Chubb; representatives of the International Geosphere-Biosphere Programme (IGBP), Professor Aidan Byrne, CEO of the Australian Research Council; Dr Subho Banerjee, Department of Climate Change and Energy Efficiency; and Dr Mike McWilliams, Chief, CSIRO Earth Science and Resource Engineering.

The officers of the IGBP Scientific Committee and members of the Secretariat and Brazil Regional Office met at the Academy 29–30 November 2012. This is the first time the officers have met in Australia. Scientific Committee Chair Professor James Syvitski and CEO Dr Sybil Seitzinger updated delegates on IGBP, the inter-agency Future Earth Initiative, and loss of land in high-population sinking deltas.

PHOTO: IUCR

Members of the International Union of Crystallography's Executive Committee in Adelaide. (Back, left to right) Wulf Depmeier (Germany), Mike Dacombe (Executive Secretary, Chester, UK), Hanna Dabkowska (Canada), Marvin Hackert (USA), Mitchell Guss (Australia), Juan Manuel Perez-Mato (Spain); (front, left to right) Elena Boldyreva (Russia), Claude Lecomte (Vice President, France), Gautam Desiraju (President, India), Luc Van Meervelt (General Secretary and Treasurer, Belgium), Sine Larsen (Past President, Denmark)

News from National Committees continued from page 7

International Geosphere-Biosphere Programme Officers (see page 7)

Geography

Chair: Dr Alaric Maude

The committee met on 18 December at Ian Potter House. Following on from contributing to the development of the *Australian Curriculum: Geography* by the Australian Curriculum and Assessment Reporting Authority, individual members of the committee are involved in various activities to produce resource materials for the new curriculum and to monitor its implementation as it is introduced.

The committee is actively involved in an ARC Linkage Fund project 'The Australian curriculum, geography and geospatial reasoning: the impact of policy on perceptions', led by Deputy Chair of the committee, Professor Margaret Robertson.

The committee acknowledged the substantial effort of Professor Nigel Tapper, who concluded his term as Chair of the committee at the end of 2012, and is very pleased he will remain as an ordinary member until 2016.

Mathematical sciences

Chair: Professor Nalini Joshi FAA

There is now a website for the *Decadal Plan for the Mathematical Sciences* at **www.mathscidecadalplan.org.au**.

The steering committee for the plan is calling for submissions by 31 March 2013 on the following themes: mathematics and statistics education in schools and colleges; mathematics and statistics education and training in universities; mathematics and statistics research (including interdisciplinary research) in universities and related institutions; mathematics and statistics (including education, training and research) in government instrumentalities, both state and federal (including government laboratories such as CSIRO and DSTO); mathematics and statistics (including education, training and research) in business and industry; present and future research centres, in mathematics and statistics; and the view of the Australian mathematics diaspora abroad.

As part of the Australian Council of Learned Academies' Securing Australia's Future program, the committee Chair is involved in 'Science, Technology, Engineering and Mathematics (STEM) — country comparisons', which is examining existing solutions to the STEM skills shortage in comparable countries. The timeline for the project is very short — a final report is due to be presented to the Prime Minister's Science, Innovation and Engineering Council in April 2013.

Mechanical sciences

Chair: Professor Ivan Marusic

Incoming Chair Professor Ivan Marusic welcomed five new members at a committee meeting at the Academy on 16 October 2012, where Professor Mark Bradford FTSE accepted the role of Deputy Chair. Initiatives discussed included working towards a report on the state of mechanical sciences in Australia and promoting its strategic role in Australia's future; improving coordination between existing societies in Australia in the mechanical sciences area; and a fundraising campaign to establish a new award for early career researchers.

Nutrition

Chair: Professor Andrew Sinclair

The committee met during the Nutrition Society of Australia's annual conference in Wollongong in November 2012. About 30 participants attended the fourth workshop for mid career researchers in the field, *Becoming Independent*, which was held during the conference. Dr Allan Green of CSIRO's Division of Plant Industry spoke at the conference on developments in new oilseed crops through GE technology. The National Committees Initiatives fund supported both meetings. The committee has written to Professor Warwick Anderson, Chief Executive Officer of the National Health and Medical Research Council, about the establishment of a diet and lifestyle grant review panel for the council's project grant funding.

Bragg Centennial Symposium

A symposium at the University of Adelaide on 6 December 2012 paid tribute to Nobel Laureates Sir William (Lawrence) Bragg FRS and Sir William Henry Bragg FRS. The two men, son and father respectively, were pioneering developers of X-ray crystallography and spent important periods of their lives in Adelaide. The conference commemorated the centenary of Sir Lawrence Bragg's paper 'The diffraction of short electromagnetic waves by a crystal', read to the Cambridge Philosophical Society on 11 November 1912. In this he outlined what we now call Bragg's Law and presented the first correct indexing of a diffraction pattern (for zinc blende).

Distinguished speakers covered many aspects of the Braggs' life and work (see the program at **http://sapmea.asn.au/conventions/crystal2012/downloads/Bragg_Symposium_Program.pdf**). Sir Lawrence's younger daughter Mrs Patience Thomson spoke memorably of her fondness for her father, and dispelled some popular misbeliefs. Many of the symposium's papers were published in a special Bragg Centennial issue of *Acta Crystallographica A* in January 2013 (see **http://journals.iucr.org/a/issues/2013/01/00/issconts.html**).

PHOTO: STEVE WILKINS

Bragg symposium speakers: front row (l to r) John Spence, Anthony Kelly, Patience Thomson, Steve Wilkins, Brian Matthews; second row (l to r) Gautam Desiraju, John Jenkins, Anthony Klein, Peter Colman, David Thomson, back row (l to r) Colin Humphreys, Tony Cheetham, Anders Liljas, Wayne Hendrickson.

At the symposium dinner in the former home of the Braggs (which included some of Sir Lawrence's favourite dishes) his grandchildren Clare and Nick Heath shared memories of their grandfather.

Other special events were a civic reception at the Adelaide Town Hall for the Bragg family (six of whom had come specially from the UK for the celebrations) and the unveiling of a statue of Sir Lawrence in front of Government House on North Terrace.

Ticking time bombs

The Second Earth System Outlook conference at the Shine Dome on 26–27 November 2012 was a great success. Australia's Chief Scientist Professor Ian Chubb opened the conference, *Ticking Time Bombs in the Human–Earth System: Information, status, timing, significance, research needs*, which preceded the 2012 Officers Meeting of the International Geosphere-Biosphere Programme in Ian Potter House on 28–30 November.

The conference explored some of the globally significant 'ticking time bombs', such as global climate change resulting from greenhouse gases, and mass extinctions, which could bring unmanageable and undesirable change unless we can anticipate them and act outside the corrective capacity of economic market forces. It examined:

- The mismatch between investment commitments in future fossil fuel infrastructure and the world's leading governments' recognition, in the Copenhagen Declaration, of the scientific view that the increase in global temperature ought not to exceed 2°C (convened by Mr Ian Dunlop)
- Polar deglaciation and its repercussions for global sea level (convened by Drs Ian Allison and Tas van Ommen)
- Interactive effects of the multiple environmental pressures on the Great Barrier Reef (convened by Professor Terry Hughes FAA and Dr Brian Walker)
- Long-term global food security risks (convened by Professor Will Steffen and Dr Roger Gifford)

The meeting was supported by funding from the Department of Climate Change and Energy Efficiency. It brought together natural environmental scientists with representation from the human sciences, science communication, industry, finance, and sustainability advocacy. The Earth System Outlook conference series is an initiative of the committee's plan *To Live within Earth's Limits: An Australian plan to develop a science of the whole Earth system*.

For presentations and extended abstracts see **www.science.org.au/events/conferences-and-workshops/earth-system-outlook2/index.html**

2013 National Museum of Australia student essay prize

The National Museum of Australia (NMA) and the Academy's National Committee for History and Philosophy of Science co-organise a biennial award, which was this year renamed to honour NMA curator Dr Mike Smith AM. The 2013 Mike Smith National Museum of Australia Student Prize for the History of Australian Science or Australian Environmental History was awarded at the NMA on 8 February 2013 during a Festschrift to celebrate Dr Smith's extensive archaeological scholarship of Australia's desert regions.

The judging panel for the 2013 prize was delighted to present the first prize of $3000 to Christina Dyson of The University of Melbourne. Christina's essay on *Living Fossils and Mouth-watering Stones: Manipulating history in the post-WWII natural Australian plant garden* was considered truly outstanding and provides a window into garden history, which should be of interest to a wide audience, extending well beyond that of garden history enthusiasts.

PHOTO: GEORGE SERRAS, NATIONAL MUSEUM OF AUSTRALIA

Sonya Duus, Academy CE Sue Meek, Christina Dyson, NMA Director Andrew Sayers, Alessandro Antonello at the Awards Ceremony for the 2013 NMA Prize.

The panel was pleased this year to award two runner-up prizes of $1000 each, one to Sonya Duus of the Australian National University for her essay *Contesting Coal: Echoes through time*, and the other to Alessandro Antonello, also from the Australian National University, for his essay *Repelling the 'Assault on the Unknown': Australia and the International Geophysical Year in Antarctica*.

Congratulations to the winners and thanks to all who submitted essays.

101 things to do with an energetic electron

Professor Joanne Etheridge presented the Lloyd Rees Lecture for 2012, '101 things to do with an energetic electron', in Melbourne on 4 September 2012. It was the 11th in the series of biennial lectures commemorating the life and work of Dr Lloyd Rees FAA, foundation chief of the Section (later Division) of Chemical Physics within CSIRO from 1947 to 1978.

Professor Etheridge, Director of the Monash Centre for Electron Microscopy, Department of Materials Engineering, Monash University, highlighted the pioneering contributions of CSIRO's Division of Chemical Physics. The major advances of that time, from the fundamental theory of electron scattering to the development of new instrumentation, underpin electron microscopy and diffraction today.

Recent revolutionary advances in modern electron optics are enabling us to generate electron beams that can be brought to a focal point much smaller than an atom. Applications of focused electron beams included a new approach to the determination of atomic structures, starting with the direct measurement of structural phase; a method to measure with unprecedented sensitivity the bonding charge density distribution in a solid; and the exploration of electron–atom interactions. Such tiny electron beams can also be used to determine the local structure and bonding of small numbers of atoms selected from within a material. Professor Etheridge illustrated this with examples of their application in a range of nanostructured materials using the ultrahigh-resolution electron microscope capability at Monash University. These included the determination of the structures of nanoparticles for photonic applications, of nanoprecipitates in lightweight structural alloys, and of nanostructured perovskites for battery and memory applications.

Joanne Etheridge, Alexander Moodie, Tony Klein (Chair, Victorian region) and Peter Hannaford after the Lloyd Rees Lecture

She concluded the lecture by asking, 'What were the ingredients that enabled so many exceptional groundbreaking scientific achievements at the CSIRO Division of Chemical Physics?' There was much to be learned about the management and optimisation of research environments, she suggested, from Lloyd Rees's leadership and the extraordinary success of his division.

Awards

Call for 2014 nominations

The Academy has opened the call for 2014 nominations for its prestigious honorific awards for career and early career researchers.

Career awards

- David Craig Medal (chemistry)
- Haddon Forrester King Medal, sponsored by Rio Tinto (mineral exploration)
- Ian Wark Medal and Lecture (applied science)
- Mawson Medal and Lecture (Earth sciences)

Early career awards

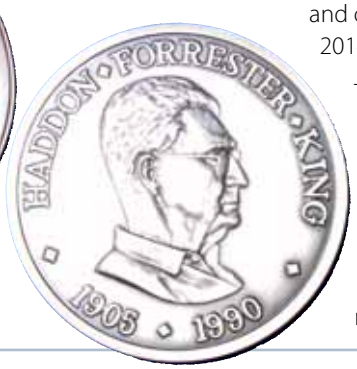
(for researchers no more than 40 years of age in calendar year of nomination)

- Anton Hales Medal (Earth sciences)
- Dorothy Hill Award (Earth sciences, reef sciences, marine geology and taxonomy)
- Fenner Medal (biology, excluding biomedical sciences)
- Ruth Stephens Gani Medal (human genetics including clinical, molecular, population and epidemiological genetics and cytogenetics)
- Gottschalk Medal (medical sciences)
- Christopher Heyde Medal (probability theory, statistical methodology and their applications)
- Le Fèvre Memorial Prize (chemistry)
- Frederick White Prize (physical, terrestrial and planetary sciences)
- Pawsey Medal (physics)

Nominations are also invited for the 2015 Matthew Flinders Medal and Lecture in the physical sciences. Only Fellows may nominate candidates for this award, but candidates do not need to be Fellows.

The closing date for nominations for these Honorific Awards is 29 July 2013.

The Academy is also opening applications for research grants, travelling fellowships and conference and research support for 2014–15.



The Academy is expecting to administer close to $92 000 in 2014 for the Douglas and Lola Douglas Scholarship in Medical Science and the Margaret Middleton Fund for endangered Australian native vertebrate animals research awards.

Travelling fellowships totalling close to $120 000 are expected to be administered by the Academy for the AK Head Travelling Scholarship for Mathematical Scientists, Graeme James Caughley Travelling Fellowship for ecologists resident in Australia or New Zealand to travel to overseas scientific centres, Oxford Nuffield Medical Fellowship, the Rudi Lemberg Travelling Fellowship for Australians or overseas scientists to visit Australian scientific centres and to deliver lectures, and the Selby Travelling Fellowship for overseas scientists to visit Australian scientific centres.

Applications are also invited for 2014 and 2015 research conference support including the Boden Research Conference in the Biological Sciences, the Elizabeth and Frederick White Research Conference in the physical sciences and the Fenner Conference on the Environment. The funding available for these three conferences is up to $30 000 in total.

The closing date for applications for travelling fellowships, and for conference and research support is 31 August 2013.

Further information is available from **www.science.org.au/awards/**

2012 BODEN CONFERENCE REPORT

The processes that together maintain protein homeostasis are collectively referred to as proteostasis, a term generally jointly attributed to Professors Rick Morimoto (Northwestern University, USA) and William Balch (Scripps Research Institute, California). Both of these eminent scientists spoke at the inaugural *Proteostasis and Disease Symposium* held in Wollongong on 28–30 November 2012 (**http://proteostasis2012.com.au/2012**), organised by Professor Mark Wilson. The symposium was an initiative of the recently formed Proteostasis and Disease Research Centre at the University of Wollongong (**www.uow.edu.au/science/researchgroups/pdrc/index.html**), a network whose researchers focus on chaperones, protein folding and related diseases.

In addition to the 2012 Boden Conference Support Grant, the symposium was supported by the Australian Society for Biochemistry and Molecular Biology, the Faculty of Science and the Centre for Biomolecular Science at the University of Wollongong, and a range of commercial sponsors. It attracted about 80 delegates, a quarter of whom came from overseas, and had 18 invited speakers (9 international, 9 national), many of whom are eminent in their fields. Professor Chris Dobson FRS (University of Cambridge) gave a keynote address. Session themes included protein trafficking, stress response and disease, protein folding and aggregation, chaperones, protein degradation, and proteostasis and disease. One of the symposium's highlights was a student session where postgraduate student researchers presented their results in 12-minute talks.

2013 Australia Day Honours

Companion in the General Division of the Order of Australia (AC)

Professor Brian Schmidt AC
for eminent service as a global science leader in the field of physics through research in the study of astronomy and astrophysics, contributions to scientific bodies and the promotion of science education.

Officer in the General Division of the Order of Australia (AO)

Professor Robert Clark AO
for distinguished service to science and technology through leadership and governance of the scientific community of the Australian Defence Force and through contributions to quantum computing and nanotechnology.

Professor Peter Hall AO
for distinguished service to mathematical science in the field of statistics through international contributions to research, as an academic and mentor, and through leadership of advisory and professional organisations.

Professor Marilyn Renfree AO
for distinguished service to biology, particularly through leadership in research into marsupial reproduction, and to the scientific community through contributions to professional organisations.

Professor George Rogers AO
for distinguished service to biochemistry through contributions to tertiary education and leadership of research into the molecular structure and growth processes of wool and hair.

Member in the General Division of the Order of Australia (AM)

Professor Michael Dopita AM
for significant service to science in the field of astronomy and astrophysics.

Public Service Medal (PSM)

Professor Brian Boyle
for outstanding public service to Australian astronomy and for leadership of the Australian team bidding to host the international Square Kilometre Array facility.

Peter Hall

Marilyn Renfree

Michael Dopita

Chevalier dans l'Ordre National de la Légion d'Honneur

Professor Kurt Lambeck
was awarded the Legion of Honour by the French Government in recognition of his contribution to the field of science and his strong ties to France.

Kurt Lambeck was presented with the Legion of Honour medal by French Ambassador Stéphane Romatet on 6 March at the Shine Dome. PHOTO: MEL ADAM, THE CANBERRA TIMES

Primary Connections

Primary Connections releases new units

On 4 December 2012 the *Primary Connections* publishing team completed four new units for release. By the end of 2012, teachers were able to purchase 28 units fully aligned to the *Australian Curriculum: Science*.

Three more units will be released in the second term of 2013. This will complete the suite of 31 fully aligned units required to implement the new national curriculum, Foundation to Year 6. The *Primary Connections* publishing team is also developing a suite of units to support Year 7 teachers. These units will be aimed at schools where Year 7 is still part of the primary years of schooling.

The South African High Commissioner and students during a science lesson at Fadden Primary School

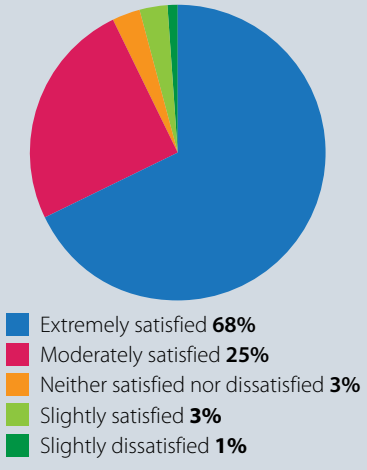
Market research

The team at *Primary Connections* conducted online market research in December 2012 by surveying both users of the units and those who have attended a professional learning event.

The aims of the survey were to see how users had heard about *Primary Connections*, how satisfied current users were, and what the users most enjoyed about *Primary Connections*.

Of the respondents, 61% had heard about *Primary Connections* by attending professional learning, while 32% had heard about *Primary Connections* from a colleague.

How satisfied are you with your experience of *Primary Connections* units?



When asked about their experience with *Primary Connections* units, 93% of users were either extremely or moderately satisfied.

When asked what the users liked most about *Primary Connections*, most referred to the user-friendly nature of the product. The quality of the science and the importance of the teacher background information, which is reviewed by Fellows of the Academy, also rated highly.

Awards and nominations

In December 2012 *Primary Connections* won *The Australian*'s Innovation Challenge Award in the Education category. *Primary Connections* was recognised for engaging students in hands-on, inquiry-based learning in science, while the teacher background information and educational design was acknowledged for supporting teachers' confidence and capacity to teach science. Professor Jenny Graves FAA, Secretary Education and Public Awareness, attended the awards with members of the *Primary Connections* team.

Professional learning

Professional learning has kicked off for 2013! Professional learning manager Sophia McLean conducted curriculum leader training at Chatswood in Sydney, 21–22 January 2013. In addition to the attendees from Australia, there were three teachers from New Zealand who had learnt about *Primary Connections* from a 2012 issue of *Education Aotearoa* (3 (4) Spring). In the journal Dr Anne Hume, a senior lecturer in the Faculty of Education at the University of Waikato, recommended the *Primary Connections* program to New Zealand teachers based on her use of the program in teacher training.

Checking the covers of the December releases at Daniels Printing Craftsmen, Perth

Other news

A visit to Fadden Primary School in Canberra was organised in November 2012 for the South African High Commissioner, Her Excellency Ms Koleka Mqulwana in response to her request to see the program in action. She saw classes from Foundation to Year 6 participating in their science lessons.

Science by Doing

Online trialling begins

During term one and term two, 28 schools across Australia will be involved in the trialling of seven new online *Science by Doing* curriculum units. Already it has been found that schools vary considerably in their online capabilities. The trial is being conducted to obtain teachers' feedback to improve the quality of the science units and their useability.

Each curriculum unit consists of three parts:

- student guide — which outlines the classroom, hands-on and discussion activities
- student digital — which provides digital learning objects, film clips, interactive and notebook activities
- teacher guide — which outlines suggestions to the teacher on how to teach and assess the unit

For convenience of use, each digital section is linked with the relevant page of the student guide. Similar connections are available in the teacher guide for the related student activities.

The new curriculum units

Year 7

The circle of life

The science of toys

Earth and space

Year 8

From little things big things grow

Rock, paper, scissors

Year 9

Ecosystems and change

Year 10

Systems on the big scale

Together with the Stage One unit 'Enough water, fit for drinking' (Year 7), the curriculum units will be freely available for all Australian schools in July 2013 on the Australian Academy of Science website.

FEATURE FELLOW

Fellows of the Academy showcased for our new Feature Fellow page include palaeontologist Professor Michael Archer (pictured), who has more than 30 years of experience in the evolutionary history of marsupials and monotremes, and Professor Bruce Armstrong, epidemiologist and public health expert specialising in the area of cancer protection from vitamin D. The Feature Fellow page, which will profile Fellows alphabetically using both extremities of the alphabet (i.e. A then Z then B then Y, and so on), can be accessed from the home page carousel or from the news page, and is publicised by social media. **www.science.org.au/fellows/feature-fellow/**

Biographical memoirs

Biographers have been appointed for the following Fellows. When there is more than one biographer, the principal biographer is listed first.

Professor Gordon Ada
Biographers: Sir Gus Nossal FAA and Professor Chris Parish

Professor Stephen Angyal
Biographer: Dr John Stephens

Professor Peter Bishop
Biographers: Professors Bogdan Dreher and Jack Pettigrew FAA

Professor Bruce Chappell
Biographers: Professors Dick Stanton FAA, Bill Compston FAA and Dr Ian Williams

Professor Bill Elliott
Biographer: Professor George Rogers FAA

Professor Nancy Millis
Biographer: Professor Jim Pittard FAA

Professor Bernard Mills
Biographers: Drs Bob Frater FAA and Miller Goss

Professor Ralph Slatyer
Biographer: Professor Graham Farquhar FAA

Biographers would be grateful to readers who could provide assistance on the basis of their personal knowledge of the individual or their work. If you would like to do so, please contact Ms Rosanne Walker, Librarian, Australian Academy of Science on **(02) 6201 9431** or email **rosanne.walker@science.org.au**

Memoirs of deceased Fellows are published in *Historical Records of Australian Science* and are also available at **www.science.org.au/fellows/deceased.html**

Obituaries

John Moore

After his undergraduate and Masters degrees in electrical engineering at the University of Queensland, John Barratt Moore FAA FTSE (b Brisbane 3 April 1941, d Canberra 19 January 2013) completed his PhD in electrical engineering at the University of Santa Clara, California, in 1966.

John returned to Australia in 1967 as senior lecturer at the University of Newcastle, rising to associate professor in 1970 and professor with a personal Chair in electrical engineering in 1973. He joined the Australian National University as a professorial fellow in the Department of Systems Engineering in 1982, became a professor in 1990 and was head of department in 1992–96 and 2002–06. He was an Emeritus Professor from 2006.

John's research was in signal processing and control systems (stochastic system identification, signal estimation, hidden Markov model processing, adaptive control, robust optimal control, and optimisation) with applications to communication systems, biological signals, radar systems, aircraft control, vision systems and robotic systems.

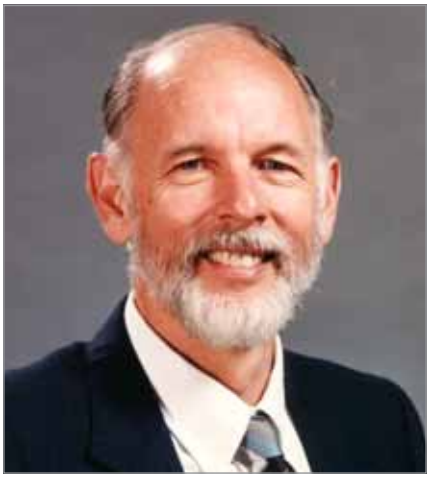
He published more than 200 papers and six books, three in conjunction with Professor Brian Anderson FAA. Commercial applications of his work included a polynomial solving routine, which has been used in IBM software since 1996.

John was elected to the Australian Academy of Science in 1994 and took an active interest in Academy affairs, including being a keen proposer of candidates for election. He was a Member of the Sectional Committees for Applied Physical Sciences (1997–2000) and Computer Science, Information and Communications (2002–04).

He was a Fellow of the Institute of Electrical and Electronic Engineers (1979), Australian Academy of Technological Sciences and Engineering (1985), and Institution of Engineers Australia (1986), and received the Centenary Medal in 2003 for his contributions to Australian science.

He is survived by his wife Jan and sons Kevin and Alan and their wives.

Based on an obituary by Professor Brian Anderson



John Moore

Jim Morrison

Jim Morrison

Professor James (Jim) Douglas Morrison AO FAA FRACI FRSC FRSE died on Friday 1 February 2013 at the age of 88.

Born on 9 November 1924 in Glasgow, Jim spent his childhood in Broughty Ferry, Scotland. He started at Glasgow University in 1942, in the middle of the Second World War, graduating in 1945 (a four year honours course completed in 2 years 9 months because of military service). Jim then approached one of his most admired lecturers, Professor JM Rutherford of X-ray crystallography fame, and joined Professor Rutherford's six other PhD students, one of whom was the late Dr Sandy Mathieson FAA.

After marrying the girl he met in his laboratory class, Krysia (Christine), in 1947, Jim began to think of their future. In 1948, Sir Ian Wark visited the lab, and advised both Sandy and Jim that he was setting up a lab in Melbourne. Upon receiving his PhD in 1949, Jim and Christine joined Sandy and Ian at the Council for Scientific and Industrial Research (CSIR) in Melbourne.

Despite the majority of his studies and work being focused on X-ray crystallography, Jim was given the job of determining whether a mass spectrometer would be useful to chemistry, Australia having recently received one from the USA.

In 1956, Jim won a Harkness Scholarship (a Commonwealth Fund Fellowship at the time), and after working in Princeton for a few years, came back to Australia as Foundation Professor in Chemistry at the newly established La Trobe University in Melbourne. Charged with setting up the Division of Physical Chemistry, Jim built a Department at La Trobe that had a reputation for excellence in research and established La Trobe as a centre for the design and construction of mass spectrometers. In order to do this he set up a high quality workshop facility capable of building precision scientific instruments and thus was heavily involved in the design of the Chemistry building.

He was a regular visitor to America, visiting the University of Utah, where he held an Honorary Professorship, to teach, among other things, a graduate course on mass spectrometry. It was in Utah that Jim's passion for dinosaurs was ignited; he visited the Morrison Formation there each year.

Jim was an acknowledged leader in the field of mass spectroscopy, particularly in its use in the study of ionisation and excitation processes in this field. His work was largely responsible for the development of electron-impact spectroscopy through which information on the energy states of molecular ions can now be readily obtained. He also made significant contributions to the use of high-resolution mass spectroscopy in the elucidation of molecular structure.

Jim became a Fellow of the Academy in 1964 and a Fellow of the Royal Society of Edinburgh (1985). He received the

Obituaries continued from page 14

Queen's Jubilee Medal (1977) and was appointed an Officer of the Order of Australia in 1990. Jim Morrison contributed greatly to the Academy through his representation on Council and various committees. He represented Physical Sciences on Council twice (1984–87, 1988–91), was Vice-President of the Academy Council (1988–91), chaired the Victorian Regional Group (1989–91), and served on the Chemistry Sectional Committee many times, both as member and as Chair, between 1965 and 1991.

An interview with Jim Morrison conducted by Professor Tony Klein is available on the Academy's website at **www.science.org.au/scientists/interviews/m/morrison.html**

Jim is survived by his three sons, Richard, Gordon and Alan.

Alan Reid

Alan (Allen) Forrest Reid AM FAA FTSE (born Gisborne, New Zealand, 26 March 1931, d Adelaide 17 January 2013) was educated at Taumarunui High School and Auckland Teachers Training College. He received his MSc from the University of New Zealand (Canterbury) in 1954 and a PhD (1959) and DSc (1970) from the Australian National University.

After a postdoctoral period at Cornell University (1964–1966), Alan's entire professional career was spent with CSIRO. In 1972 he was appointed Assistant Chief of the Division of Mineral Chemistry; in 1982, Chief of the Division of Mineral Engineering; in 1984, Director of the Institute of Energy and Earth Resources; and in 1988, Director of the Institute of Minerals, Energy and Construction, which comprised seven CSIRO Divisions. He was also President of the University of Sydney Chemical Society (1988–89).

Alan was an internationally renowned solid state chemist with an overpowering desire to see his own work and that of others applied to the mineral processing industry, and in his role as Director of Institutes within CSIRO, was a dedicated and visionary leader who created an environment where great science and direct application to the minerals and energy industries came together. His vision and perseverance led to the establishment of the CSIRO Minerals and Energy complex at Bentley, WA, and the expansion of CSIRO's multi-divisional site at North Ryde, NSW.

His early work resulted in patents for titanium processing. He contributed to the development of commercial solar energy panels and to a commercial technique for analysing mineral assemblages. The mineral reidite, a high pressure phase of $ZrSiO_4$, was named after him.

After retirement in 1997, Alan was Chairman of the Board of the Australian Petroleum Cooperative Research Centre and Technical Director of Australian Environmental Resources NL.

Alan was elected a Fellow of the Australian Academy of Science (1982), Australian Academy of Technological Sciences and Engineering (1988) and Royal Australian Chemical Institute. His many awards included the CSIRO Rivett Medal (1970), the Academy's

Alan Reid

Ian Wark Medal and Lecture (2008) and membership of the Order of Australia in 1993. He was the Royal Chemical Society Lecturer in Australia in 1988.

An active Fellow of the Academy, Alan served on the Sectional Committees on Applied Sciences (1984–87) and Solid and Fluid Earth and Planetary Sciences (member 1991–92 and Chair, 1993–95), and on the Ian William Wark Medal Selection Committee (1989). He also served as a member of the Weizmann Institute Fund (1984–88).

Alan was an accomplished painter. He joined the Board of the Central School of Art attached to Flinders University in 2005.

Alan is survived by his partner Prue (with whom he shared a passion for art), his former wife Hetty, sons Michael and Tom, daughter Kate, five stepchildren and five grandchildren.

Based on an obituary by Dr Bruce Hobbs

Help us keep *Nova: science in the news* up to date — adopt a topic today!

Nova: science in the news is one of the Academy's most popular resources, accounting for approximately one third of the Academy website's traffic.

Over the years, *Nova* has grown to include more than 120 topics and keeping all these topics up to date with the most recent, accurate and cutting-edge science has become an enormous task. Maintaining *Nova*'s integrity is important to us, and we would greatly appreciate expert input from our Fellows.

We invite all Fellows to take the time to explore the variety of *Nova* topics and become involved in contributing to keeping *Nova* in the forefront of the provision of cutting edge scientific information in their particular areas of expertise. All Fellows need to do is read over/keep an eye on *Nova* topics that interest them, and let us know of any recent developments. At the same time, this may provide an opportunity for Fellows to showcase their research and ensure their work is effectively communicated to *Nova*'s extensive audience.

NOVA SCIENCE IN THE NEWS

Interviews with Australian Scientists

The interviews program was delighted to finally secure an interview with the camera-shy Professor Jan Anderson FAA, who has revolutionised the field of photosynthesis. Professor Anderson was interviewed by long-time colleague and friend Professor Barry Osmond FAA at the Shine Dome in Canberra on 31 January 2013. After a magical childhood in Queenstown, New Zealand, Jan Anderson had to do some negotiating around her Department of Education high school teachers bursary before she was allowed to go on to do her PhD at the University of California Berkeley under the supervision of Nobel Laureate Professor Melvin Calvin.

An interview with Professor Mandayam Srinivasan FAA was recently posted on the Academy website at **www.science.org.au/scientists/**. Professor Srinivasan's early interest in making transistor radios with his father led to his training as an engineer, which gave him the grounding needed to study fly vision. His work with honeybees helped to discover how they use their vision to successfully navigate through narrow tunnels and make precise landings. This research later led to the development of self-navigating robots.

Barry Osmond and Jan Anderson after completing Jan's interview

AUSTRALIAN SCIENCE: GLOBAL IMPACT PUBLIC LECTURE SERIES

In February 2013 the Academy started a new public lecture series entitled *Australian science: global impact*, highlighting Australia's top scientists and their breakthroughs. The series is chaired by Professor Brian Schmidt FAA FRS Nobel Laureate, winner of the 2011 Nobel Prize in Physics for his discovery that the expansion of the universe is accelerating. The series will feature the scientists behind the invention of the bionic ear, the development of the cervical cancer vaccine, WiFi, and the chemistry of turning waste into environmentally friendly bio-oil.

The series began at the Shine Dome, and online at **www.science.org.au/events/publiclectures** with the February lecture by Academy President Professor Suzanne Cory describing her research into cell death and its implications for cancer treatment and the March lecture by Professor Schmidt on Australia's pioneering work in astronomy.

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