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AUSTRALIAN ACADEMY OF SCIENCE

Newsletter

APRIL–MAY 2018 NUMBERS 115–116

Newsletter 115, April 2018

Message from the Chief Executive—April 2018

April 16, 2018

The Academy will soon celebrate an important anniversary—the 60th anniversary of the laying of the foundation stone of the Shine Dome. Fellow of the Academy, the late Arthur Hogg FAA had suggested that a fragment of the Great Melbourne Telescope that had been discarded and was located on Mt Stromlo, near Canberra, be used as the Foundation stone. Roy Grounds, the architect responsible for the Dome's unique design was present when then Prime Minister Sir Robert Menzies laid the stone on 2 May 1958. Should you be in or around the building please feel free to visit the Dome and view the historic stone and other artefacts that are located in the foyer.

It's not too late to register for the Academy's annual flagship event, Science at the Shine Dome, to be held on 22-24 May. It's a unique occasion to celebrate science and to honour outstanding achievements in science. For the first time, the Academy is proud to offer child minding services and carer assistance grants to support parents and carers participation at Science at the Shine Dome. The

Prime Minister Sir Robert Menzies laying the Shine Dome foundation stone on 2 May 1958.

April newsletter includes information on how to access these opportunities.

Australia's brain scientists have formed an alliance calling for national efforts to understand the brain and supercharge advances in therapies and the emergence of new technologies and industries in Australia. At the end of March the Australian Brain Alliance, Chaired by Professor Linda Richards FAA, launched the national campaign to 'Crack the Brain's Code'. Brain alliance members discussed, with more than 75 politicians and their staff, how brain science is informing the way we live, work and play and how Australia can be positioned on this neuro-frontier. You can support these efforts by becoming a Brain Champion today. You can read more about the quest to establish an Australian Brain Initiative and Australia's involvement in the International Brain Initiative in the April newsletter.

Anna-Maria

Science at the Shine Dome and other coming events

April 16, 2018

Science at the Shine Dome 2018: Celebrating excellence in Australian science

22–24 May, Canberra

The Academy's three-day flagship event in May each year brings Australia's most influential scientists to the iconic Shine Dome in Canberra to celebrate science and to honour outstanding achievements in science.

Science at the Shine Dome is an event for researchers from all disciplines and career levels to come together and share knowledge. This includes the admission of new Fellows to the Australian Academy of Science, national awards to honour excellence at all career levels, a networking Gala Dinner with political, science sector and industry

representatives, and a high-powered symposium on an issue of national importance. A major focus at Science at the Shine Dome is giving early- to mid-career researchers professional development and the opportunity to engage with senior scientists.

Symposium

As part of the event, our one-day symposium is Predict, respond, recover: science and natural disasters. It focuses on the role science plays in predicting, mitigating, responding to and recovering from natural hazards and weather events. The symposium will cover a range of significant weather events, along with perspectives from diverse scientific disciplines. It will be of interest to

Open to all

Science at the Shine Dome attracts a national and international audience of over 400 people and boundless networking opportunities with Australian Academy Fellows, Chief scientists, Nobel Prize winners, early- and mid-career researchers, government representatives, politicians, media, science sector organisations, and the public. Online, the event reaches an audience of over half a million via a range of social media and digital technology platforms, making the event truly global.

It's possible to register for some or all of the event.

Join us in 2018 to celebrate excellence in Australian science!

Child minding services and carer assistance grants

The Academy offers parents and carers two ways to access support during Science at the Shine Dome:

- carer assistance grants for support at home
- child minding services at the event.

Arrange child minding or apply for a carer assistance grant

Science Pathways 2018: Diversify your thinking

23 – 24 April, Brisbane

Diversify your thinking will bring together early- and mid-career researchers (EMCRs) and scientific leaders from academia, industry and government.

Australia's scientific and innovative future calls for a generation of science leaders equipped with the right tools and strategies to better understand the key considerations for interdisciplinary research and collaborations, to achieve more inclusive and equitable environments, and to improve their access to funding opportunities from non-traditional sources.

Bridging the gap between what needs to be achieved in these areas and the current settings represents one of the most important challenges facing emerging researchers. 'Diversify your thinking' will create insightful discussion and present key findings on how to face these challenges and implement solutions. The event offers a highly interactive program with a strong professional development focus for EMCRs and with opportunities to network with other future leaders from different backgrounds.

Boden Research Conference: Ecological surprises and rapid collapse of ecosystems in a changing world

8 – 9 May, Canberra

It is critical to Australia's future to understand the underlying patterns

and cumulative impacts of climate change. The 2018 Boden Research Conference will be a cross-disciplinary examination of emerging phenomena that have widespread devastating impacts, and will focus on developing a common conceptual framework for characterising and understanding ecosystem changes. It will also aim to develop an understanding of the needs of environmental managers and inform future policy.

With the generous support of the late Dr Alex Boden AO FAA, these small specialist conferences in the biological sciences enable research workers in rapidly advancing fields to discuss current advances and problems. One conference is funded annually with up to $10,000 provided. Expressions of intent for next year's conference are currently open until 1 June **science.org.au/opportunities/conference-and-lecture-funding/boden-research-conferences**.

Greater coordination of research needed to 'crack the brain's code'

March 27, 2018

Leading brain scientists are calling for greater coordination and scale of Australian brain science to drive the development of neuro-technologies, and to ensure advances in preventing and treating brain-related diseases are realised in the next ten years.

The scientists will take their "moon-shot" proposal to Australia's politicians as they launch a national campaign, 'Crack the Brain's Code', this week at Parliament House.

(L-R) Professor Linda Richards FAA, Dr Andrew Leigh MP and Ms Anna Maria Arabia

Chair of the Australian Brain Alliance (ABA) and Fellow of the Australian Academy of Science, Professor Linda Richards, said the initiative is aimed at exploiting our country's unique research strengths, raising the prospect of breakthrough therapies and the emergence of new technologies in Australia.

"The applications of brain science have the potential to define the twenty-first century. Cracking the brain's code will impact our health and education systems, enhance our national security and defence capability, and allow us to lead in artificial intelligence, machine learning and high-performance computing," Professor Richards said.

"Australia needs to make a strategic national investment in brain sciences, or else we will fall behind while the rest of the world takes advantage of the advances in brain research."

Australian brain researcher and clinical neurologist Professor Sam Berkovic (FAA) said Australian science punches above its weight in brain science research, but further investment is needed.

"We have the potential in terms of the people, the technology and the ideas to take things much further," Professor Sam Berkovic said.

"A greater focus on an integrated trans-disciplinary approach is required to provide revolutionary solutions to some of the most difficult challenges facing brain researchers."

Watch the 'Crack the Brain's Code' video **facebook.com/AustralianAcademyofScience/videos/1616821341728724/**

2019 Academy awards and grants now open

March 19, 2018

Nominations and applications for the Australian Academy of Science's 2019 honorific awards, research conferences, research grants and travelling fellowships are now open.

Nominations for honorific awards

The Academy is calling for nominations for its prestigious honorific awards for early-career, mid-career and career researchers.

Previous winners of the Academy's honorific awards have gone on to great achievements, including winning Nobel Prizes and election to international Academies for their outstanding contributions to science.

Career awards are presented in chemistry, mathematics, Earth sciences and physical sciences. Candidates for the Matthew Flinders Medal and Lecture must be nominated by Fellows of the Academy.

Research scientists from 8 to 15 years post-PhD are invited to apply for the Academy's mid-career awards, which are offered in experimental biomedicine, and women leaders in any branch of science.

Researchers up to 10 years post-PhD are invited to apply for early-career awards in Earth sciences, mathematics, biology, medical research, engineering, chemistry, statistics, physics and human genetics.

The closing date for the 2019 award nominations is **9 am (AEST) 1 May 2018**. Referees will have until 1 June to submit their letters of support.

Applications for research grants, travelling fellowships, and research conference funding

The Academy has opened applications for research grants, travelling fellowships and research conference support for 2018–19.

The closing date is **9 am (AEST) 1 June 2018**.

Close to $280,000 will be offered by the Academy in 2018 for support for research in:

- medical science
- endangered Australian native vertebrate animals
- environmental science
- history of science
- population and environment
- marine, soil and plant biology.

More than $50,000 is available for research conference and lecture support and for travelling fellowships to overseas scientists to visit Australian research centres and deliver national lecture tours. Research conference support includes 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.

Find out more about grants, fellowships and conference funding offered by the Academy **science.org.au/opportunities**.

The closing date for application and nomination for Academy grant funding is **9 am (AEST) 1 June 2018**.

Basser Library and Fenner Archives to remain with Academy

April 16, 2018

The Academy's Basser Library and Fenner Archives are to remain at the Shine Dome in Canberra.

The Council of the Australian Academy of Science made a decision in 2016 to preserve the historically significant holdings of the Academy's Basser Library and Fenner Archives—particularly the collections in the archives—by improving conservation conditions for each collection. The Council also decided to explore options for relocating the collections to publicly focused institutions.

The Academy is close to completing the physical conservation of collections in archive-quality folders and boxes, and removing fasteners that may in time damage material. We have also greatly improved the quality of data we hold about each collection.

Regarding the possible relocation of collections, however, we have discovered that the original records we hold for the majority of collections do not meet the stringent requirements of institutions such as the National Library of Australia and universities that we had considered approaching. This means that we

The Basser Library and Fenner Archives are to remain at the Academy's Shine Dome in Canberra.

are effectively unable to relocate collections.

We will therefore retain the library books and the archival collections at the Academy and provide access for researchers by arrangement, with the long-term view to professionally digitising important historical content—the latter depending on substantial, special-purpose funding. Society collections will also be retained.

We thank the expertise of the Task Force that was convened in 2015 to advise Council on the original decision. Our aim is very much still to obtain the best outcome possible given that we are a small organisation.

Links strengthened with Sri Lanka

April 16, 2018

Academy President Professor Andrew Holmes has told a meeting of Sri Lanka's leading scientists that science academies around the world play a fundamental role in promoting science that contributes to the national development in their own countries, while also enhancing global science and technology.

Attending the annual meeting of the National Academy of Sciences of Sri Lanka in March, Professor Holmes said that the purpose of science is to make the world a better place and improve lives, whether through applied research that solves immediate problems, or basic research that advances human knowledge and understanding. It is researchers and innovators—those with the ideas, the knowledge and the drive to solve problems and develop new products and services—who create new businesses and jobs, and who refresh and renew existing industries.

Professor Holmes also delivered a statement on behalf of Foreign Secretary Professor Cheryl Praeger, who chairs the Special Committee for Women in Science and Engineering of the Association of Academies and Societies of Sciences in Asia, on the launch of the national Organization for Women in Science for the Developing World in Sri Lanka.

Professor Holmes's visit provided an opportunity to strengthen important links between the two academies.

Primary Connections: 15 years linking science and literacy

April 16, 2018

The Academy's Primary Connections program is celebrating 15 years building the confidence and competence of tens of thousands of teachers to teach science and literacy in primary schools.

Academy President Professor Andrew Holmes (centre right) with Dr Azeez Mubarak (centre left), President of the National Academy of Sciences of Sri Lanka. With them, from the Sri Lanka National Chapter of the Organisation for Women in Science for the Developing World, or SLNC OWSD, are (from left) Dr Tharanga Thoradeniya, Professor Sunethra Atukorala, Professor Nadira Karunweera, Professor Kshanika Hirimburegama, Dr Hermali Silva and Professor Sugandhika Suresh. Photo: Hemavaruni Fernando

> *I highly recommend this workshop and think it should be compulsory! Primary Connections puts students in the driver's seat and encourages them to find answers to their own questions. This model should be encouraged in all teachers.*
> *Primary science teacher, WA.*

Major achievements of the program include extensive evidence that the program has a positive impact on teachers and students, the development of an Indigenous perspectives framework, and multiple awards.

The program is endorsed by Nobel Laureate and Vice-Chancellor of the Australian National University, Professor Brian Schmidt.

Along with professional learning opportunities, teachers have access to 38 science units for the classroom. Resources are developed by curriculum experts and reviewed by educational experts, teachers and scientists.

Primary Connections is supported by the Australian Government Department of Education and Training through the Maths and Science Participation Program.

Mathematics and sport: two very different videos

April 16, 2018

The Academy has produced a new video to promote the work of its school maths program, reSolve: Mathematics by Inquiry. The video team filmed reSolve Champions in the classroom at Northbridge Public School and Cherrybrook Technology High School in Sydney. The video was watched more than 10,000 times on Facebook alone in the first few days since it was published **facebook.com/AustralianAcademyofScience/videos/1627958233948368/**.

To coincide with the Commonwealth Games, the Academy has also produced a series of articles on the science of sport. These articles, combined with another video, are drawing attention to the important relationship science has with our elite athletes **facebook.com/AustralianAcademyofScience/videos/1627941593950032/**.

Opportunities for scientists—April 2018

April 16, 2018

In addition to the Academy's honorific awards and research grants, travelling fellowships, and research conference funding, the following opportunities are now

open for applications and nominations.

See more external awards and prizes **science.org.au/opportunities/recognition/external-sources-recognition**

Australian–French Entrepreneurship Challenge

The Australian Academy of Science and the French Embassy invite PhD candidates to apply to participate in the third Australian–French Entrepreneurship Challenge.

The Australian–French Entrepreneurship Challenge brings together creative-minded PhD candidates to brainstorm innovative ideas right through from concept to creation—all in the space of 24 hours. This year's challenge is organised by Macquarie University, with the support of the Academy, the French Embassy in Australia, and the Australian and French business communities.

More information on the Australian–French Entrepreneurship Challenge **science.org.au/opportunities/travel/grants-and-exchange/australian-french-entrepreneurship-challenge**

Applications close 7 May 2018

Falling Walls Lab Australia 2018

Applications from Australian researchers, postdocs and students, entrepreneurs, engineers and innovators from all areas to attend Falling Walls Lab Australia 2018 are now open.

20 contestants will be invited to participate in this challenge with each required to give a 3 minute presentation on their research work, business model, social idea or initiative based on the 'Which walls will fall next' concept.

Candidates should be research active in any field of the natural sciences, including technology, engineering and medicine as well as social sciences and humanities.

More information on Falling Walls Lab Australia **science.org.au/opportunities/travel/grants-and-exchange/falling-walls-lab-australia**

Applications close 28 May 2018

Visit to the National Institutes of Health in the USA by a junior scientist

The Academy invites applications from junior Australian scientists, who are no more than 30 at the time of application, to visit the National Institutes of Health (NIH) in the United States of America during 2019 for between 6 and 13 weeks.

The successful applicant will receive a contribution towards the direct return air travel between Australia and the host institution up to a maximum of US$3,000 provided by the Foundation for the National Institutes of Health (FNIH). A once-off living allowance of up to a maximum of A$400 will be provided by the Adam J. Berry Memorial Fund (AJBMF). The National Institutes of Health (NIH) will provide a small daily stipend during the participant's stay in America.

More information on the NIH visit **science.org.au/opportunities/travel/grants-and-exchange/visit-national-institutes-health-usa-junior-scientist**

Applications close 12 June 2018

KNAW Bob Pinedo Cancer Care Award

The KNAW Bob Pinedo Cancer Care Award is a biennial award intended for a researcher or team of researchers whose contribution to translational cancer research and compassionate cancer patient care is regarded as outstanding.

The Award consists of a cash prize of €100,000 and a bronze sculpture in the form of Professor Pinedo's hand.

The Academy is responsible for selecting the winner or winners.

More information on KNAW Bob Pinedo Cancer Care Award **knaw.nl/en/awards/awards/knaw-bob-pinedo-cancer-care-award**

Nominations close 1 May 2018

International Prize for Biology

The International Prize for Biology is awarded to an individual who has made outstanding contribution to the advancement of research in fundamental biology. The research field for 2018 is palaeontology, with a prize of 10 million Yen.

More Information on the International Prize for Biology **jsps.go.jp/english/e-biol/index.html**

Applications close 20 April 2018

Australian Museum Eureka Prizes

Seventeen Australian Museum Eureka Prizes are awarded in the categories of:

- research and innovation
- leadership
- science engagement
- school science.

More information on the Australian Museum Eureka Prizes **australianmuseum.net.au/eurekaprizes**

Applications close 4 May 2018

South Australian Science Excellence Awards

The SA Science Excellence Awards are awarded to high achievers in research, industry and education in South Australia. The South Australian Scientist of the Year will receive $25,000 prize money and winners of other categories will receive $10,000.

More information on the South Australian Science Excellence Awards **statedevelopment.sa.gov.au/science/sa-science-excellence-awards**

Nominations close 11 May 2018

Bower Award and Prize for Achievement in Science

The Bower Award and Prize for Achievement in Science is awarded to individuals who have made significant contributions to green and sustainable chemistry—chemistry focused on the technological design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. The prize is US$250,000.

More information on the Bower Award and Prize for Achievement in Science **fi.edu/awards/bower-award-prize-achievement-science**

Nominations close 31 May 2018

Resilient Australia Awards

The Resilient Australia Awards is a nationwide program to recognise and promote initiatives that strengthen community disaster resilience.

More information on the Resilient Australia Awards **aidr.org.au/programs/resilient-australia-awards**

Applications close 31 May 2018

Eric and Sheila Samson Prime Minister's Prize for Innovation in Alternative Fuels for Transportation

The Eric and Sheila Samson Prime Minister's Prize is awarded annually to individual(s) for global innovation or a scientific or technology breakthrough in the field of alternative fuels for transportation. The recipient(s) can be citizens of any country. The prize is US$1,000,000.

Eric and Sheila Samson Prime Minister's Prize **pimages.most.gov.il/PMA/**

Nominations close 31 May 2018

Fellows Update

April 16, 2018

Obituary

Professor David Cooper AO FAA FAHMS FRACP FRCP FRCPA
19 April 1949 – 18 March 2018

Professor David Cooper was one of the most influential clinical scientists worldwide in the field of HIV/AIDS. Shortly after the human immunodeficiency virus (HIV) was discovered in 1984, Professor Cooper published a seminal paper in the prestigious medical journal The Lancet, which described the initial encounter of HIV with the human immune system. Professor Cooper was a key investigator in proving the efficacy of highly active antiretroviral therapy and implementing its benefits. He was one of the first clinical scientists to recognise the metabolic toxicities of antiretroviral therapy and to contribute to an understanding of the pathogenesis, and was instrumental in the international

Professor David Cooper

fight against HIV/AIDS in the developing world.

Professor Cooper was Director of the Kirby Institute at UNSW Sydney and one of the first responders when the HIV epidemic reached Australia in the 1980s. David played a pivotal role in the ongoing fight against HIV and in 2003, in recognition of his leading contribution in the field of HIV/AIDS research and for developing new treatment approaches, he was made Officer in the General Division of the Order of Australia (AO).

Professor Cooper was elected to the Academy in 2007. He was a member of the Academy's Europe Committee from 2007 to 2011. He was one of four Academy Fellows who convened the 2016 Australia–Indonesia Science Symposium held at the Shine Dome that focused on health, agriculture, the environment and big data, and was a current member of Sectional Committee 13: Immunology and Microbiology.

Message from the Chief Executive—May 2018

May 16, 2018

Science at the Shine Dome is a celebration of science.

Next week I will have the great honour of welcoming Fellows and guests to the 64th annual Science at the Shine Dome, a remarkable celebration of science and a display of scientific excellence in Australia. Guests will have the opportunity to hear from Australia's most distinguished scientists, including 23 researchers who will be formally admitted to the Academy's Fellowship. If you'd like to join us for some or all of the event, be quick—registrations close 5 pm Wednesday 16 May.

Science was also celebrated in the 2018–19 Federal Budget handed down on 8 May. The Academy welcomed a number of new budget initiatives to support science. You can read about these in the May newsletter or view a summary in this video **facebook.com/AustralianAcademyofScience/videos/1659561194121405**. Many Fellows of the Academy have provided the scientific evidence base and high quality, independent advice to government which contributed to a number of measures announced in the budget. I am pleased to see Fellows' involvement and the Academy's sustained advocacy efforts have paid off.

I hope you enjoy the May newsletter.

Anna-Maria

Good outcomes for science in Budget 2018

May 08, 2018

The 2018 Federal Budget contains good news for Australian scientists and research institutions with welcome investments in critical national research infrastructure and medical research.

The budget also includes new initiatives to support women in STEM, an Australian space agency and funding to conserve and protect the Great Barrier Reef.

"This is a good budget for science," said Professor Andrew Holmes, President of the Australian Academy of Science.

"It reflects the long-term and strategic approach that is needed for Australia to benefit from science and innovation at a global scale."

A 12-year National Research Infrastructure Investment Plan will commit $1.9 billion to critical national research infrastructure, including $140 million for upgrades to the two most powerful computing facilities in the Southern Hemisphere.

"Australia's national supercomputers give scientists across government, industry and universities the processing power for the complex scientific computations needed in an advance society including accurate weather forecasts, drug development, and large-scale astronomy," Professor Holmes said.

Medical research is also a centrepiece of the Budget, with a new $1.3 billion National Health and Medical Industry Growth Plan that will play to Australia's strengths in medical science and technology.

This plan includes a 10-year $500 million *Genomic Health Futures Mission* to develop 'precision medicine' approaches to a wide range of diseases.

It also includes 10-year investments of $248 million for rare cancers and

diseases and $125 million for the Million Minds Mental Health Research Mission to support more research and better diagnosis and treatment of mental illness.

The Budget includes a $41 million space agency and investment program, $4.5 million in new measures to encourage girls and women to pursue STEM education and careers, and a $29.9 million research initiative on Artificial Intelligence and Machine Learning.

"We have a long way to go as a nation, particularly on big issues like STEM education and training at school and university and climate change," said Professor Holmes.

"But we are moving forward together and the Government has made a clear commitment in this Budget to working collaboratively with the science sector to maximise the benefits for all Australians."

Science budget highlights

- **A 12-year $1.9 billion National Research Infrastructure Investment Plan** - $393 million over five years from 2017-18. Investments will be guided by the National Research Infrastructure Roadmap, developed by Australia's Chief Scientist, and will require co-investment by industry and other institutions.
  - Initial investments include **$140 million upgrades to the National Computational Infrastructure in Canberra** (announced December 2017) and the Pawsey Centre in WA.
- **A Science and Technology Growth Plan** that will support:
  - $26 million over four years to establish an **Australian space agency**, together with investment of $5 million per annum for three years to engage in international space research projects and attract investment to Australia facebook.com/AustralianAcademyofScience/videos/1659302107480647/.
  - **$4.5 million for a suite of new measures to encourage girls and women to pursue STEM education and careers**, including a decadal plan for women in science, a toolkit to encourage girls into STEM studies, and a new National Women in STEM Ambassador.
  - **A $25 million research initiative on Artificial Intelligence and Machine Learning** including new collaborative research delivered through the Cooperative Research Centres program, and a strategic roadmap and an ethics framework led by CSIRO's Data61.
- A **10-year $1.3 billion National Health and Medical Industry Growth Plan**, supported by proceeds from the Medical Research Future Fund. This plan includes:
  - $500 Million *Genomic Health Futures Mission* that will develop new 'precision medicine' approaches to a wide range of diseases.
  - $240 million for a Frontier Science program aiming to support innovative medical research, devices and treatments.
  - $248 million for research on rare cancers and diseases.
  - $125 million for the *Million Minds Mental Health Research Mission* to support more research and better diagnosis and treatment of mental illness.

- **Changes to the R&D Tax Incentive that will improve transparency and accountability of the Government's largest single research program**, and provide better incentives for Australian and international companies to invest in cutting-edge research and innovation in Australia.
- **$260 million investment in satellite positioning and imaging infrastructure through Geoscience Australia**. This will improve GPS location accuracy to within 10cm throughout Australia, and to 3-5cm when combined with mobile phone infrastructure in urban areas.
- A **$20 million Asia Innovation Strategy** supporting Australian business and researchers to collaborate in our region. This includes **funding to extend the Australia-India strategic research fund for a further four years**.
- A welcome return to indexation of ARC Discovery and Linkage schemes after several years of flat funding, and stable funding for other major Australian research agencies including CSIRO, ANSTO, and Geoscience Australia.

- Continued funding to engage Australians in STEM through the Inspiring Australia program.
- **New and continued funding of $536 million to protect the Great Barrier Reef**. A large part of this funding will be delivered in partnership with the Great Barrier Reef Foundation, with a focus on improving water quality, funding research into coral restoration and adaptation and combating crown-of-thorn starfish.

Last chance to register—Science at the Shine Dome is almost here

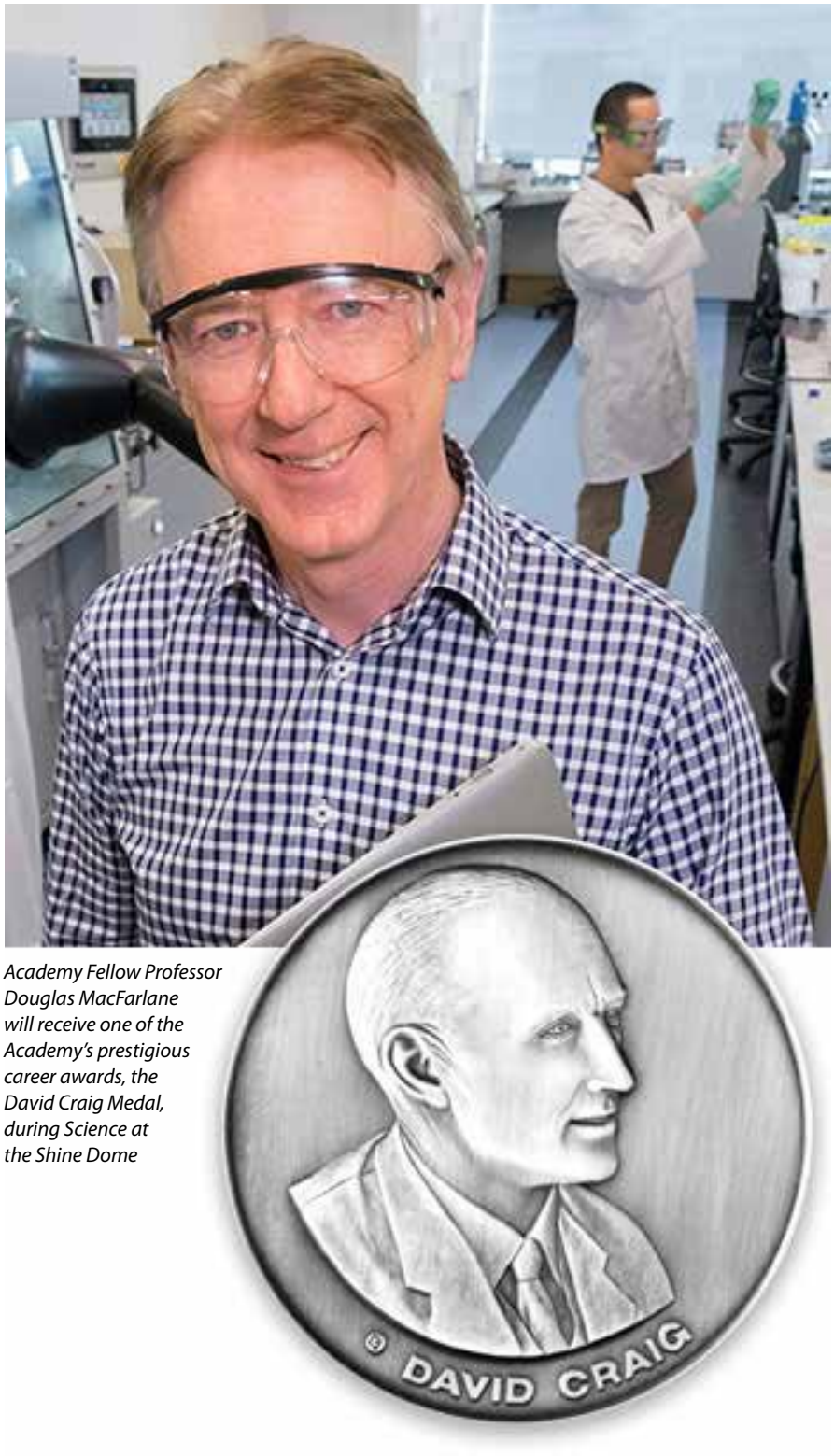
May 16, 2018

Register now for the Academy's annual three-day flagship event, which brings Australia's most influential scientists to the iconic Shine Dome in Canberra. From 22 to 24 May, the Shine Dome will be the meeting place for researchers from all disciplines and career levels to celebrate science and to honour outstanding achievements in science. Registration closes 5pm 16 May; for registration enquiries after this date please email **events@science.org.au**

Over these three day, we will admit new Fellows to the Australian Academy of Science, award medals to honour excellence at all career levels, enjoy a networking gala dinner with political, science sector and industry representatives, host a high-powered symposium on an issue of national importance, and launch an award for Aboriginal and Torres Strait scientists.

This celebration of Australian science is made possible through many partnerships. This year we welcome Defence Science and Technology, which has joined us as the Platinum Partner for Science at the Shine Dome. We also thank the University of Melbourne, the Australian National University, Monash University, the University of Queensland and the Department of Industry, Innovation and Science, which are supporting us to make this event happen in 2018.

Find out more about all our event partners **aas.eventsair.com/QuickEventWebsitePortal/science-at-the-shine-dome-2018/science-at-the-shine-dome-2018/ExtraContent/ContentPage?page=2**



Academy Fellow Professor Douglas MacFarlane will receive one of the Academy's prestigious career awards, the David Craig Medal, during Science at the Shine Dome

Science and natural disasters symposium

Our one-day symposium in 2018 is Predict, Respond, Recover: science and natural disasters, and is made possible with the support of the Bushfire & Natural Hazards Cooperative Research Centre. The symposium is focusing on the role science plays in predicting, mitigating, responding to and recovering from natural hazards and weather events, and we will hear from a number of experts including keynote speakers Mr Mark Crosweller, Dr Richard Thornton and Dr Sue Barrell.

With the support of other symposium partners, the Bureau of Meteorology, the University of New South Wales, Queensland University of Technology and the Cyclone Testing Centre, we will also hear from Dr Dragana Zovko Rajak, Dr Sarah Perkins Kirkpatrick, Associate Professor Jason Sharples, Asssociate Professor Mark Quigley, Professor Terry Hughes, Professor Helen Berry, and Professor Vivienne Tippett.

Australian of the Year coming to gala dinner

This year's annual gala dinner is one not to miss, and tickets are selling quickly! Our special guest is 2018 Australian of the Year, Academy Fellow Professor Michelle Simmons who will be in conversation with Virginia Haussegger AM, Director of the 50/50 by 2030 Foundation. We will also hear from Professor Alex Brown from UniSA, our major sponsor for the dinner.

Support for parents and carers

In 2018, for the first time, the Academy will be offering support to parents and carers who wish attend the event. Through the support of the University of Sydney, onsite child minding is available, along with carer grants of up to $500 to enable delegates with caring responsibilities to attend. The Academy is proud to be working with the university to make our event more accessible.

Academy Fellows elected to Royal Society

May 09, 2018

Five Academy Fellows and one Academy Corresponding Member have been elected to the Royal Society of London.

Professor Frank Caruso FAA FRS is a Melbourne Laureate Professor and an NHMRC Senior Principal Research Fellow at The University of Melbourne. He is Deputy Director of the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology. He received his PhD in 1994 from The University of Melbourne and thereafter

(from top left) Frank Caruso, Graeme Jameson, Ingrid Scheffer, Michelle Simmons, Peter Visscher and Jillian Banfield have all been made Fellows of the Royal Society.

conducted postdoctoral research at CSIRO Division of Chemicals and Polymers. From 1997–2002, he was an Alexander von Humboldt Research Fellow and group leader at the Max Planck Institute of Colloids and Interfaces. Since 2003, he has been a professor at The University of Melbourne and has held ARC Federation and ARC Australian Laureate Fellowships. He was elected a Fellow of the Australian Academy of Science in 2009 and was awarded the CSIRO Eureka Prize for Leadership in Science in 2013. He has published over 400 peer-reviewed papers and was on Thomson Reuters' 2014 list of World's Most Influential Scientific Minds. He is an Executive Editor of ACS *Chemistry of Materials* and is on the Editorial Advisory Board of ten other scientific journals.

Professor Graeme Jameson AO FAA FRS FTSE is a Laureate Professor of the University of Newcastle, Australia. His special interest is the mechanics of multiphase systems, especially the interaction of bubbles and particles in suspensions. He has a BSc from the University of New South Wales and a PhD from the University of Cambridge, both in Chemical Engineering. His focus is the froth flotation process for the recovery of valuable minerals from finely-ground ores. His researches led to the introduction of a radical new device, the Jameson Cell, for the recovery of very fine particles, and more recently, a new way of recovering coarse particles. He has won numerous awards, including the Ian Wark Medal of the Australian Academy of Science, the Gaudin Award of the US Society of Metallurgical Engineers, and the Prime Minister's Science Prize for Innovation. He is a Fellow of the Royal Academy of Engineering, the US National Academy of Engineering, the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering. He is an Officer of the Order of Australia (AO).

Professor Ingrid Scheffer AO FAA FRS is an Australian clinician-scientist whose work as a paediatric neurologist and epileptologist has transformed understanding of epilepsy. She has defined many new epilepsy syndromes, and her work led directly to the identification of the first gene for epilepsy in 1995, and many epilepsy genes subsequently. In 2017, she led the first major revision of the classification of the epilepsies in 28 years, the major tool worldwide for the diagnosis and management of people with epilepsy. Her collaborative work has led to a deeper understanding of the biology of seizures and revolutionised scientific approaches to these disorders. Her clinical focus has shed light on the myriad of co-morbidities seen in people with epilepsy, particularly the severe infantile and childhood developmental and epileptic encephalopathies which often carry a poor prognosis. In 2014, she was appointed as an Officer of the Order of Australia and, in the same year, she won the Australian Prime Minister's Prize for Science with Samuel Berkovic FRS. In 2012, she was awarded the L'Oreal-UNESCO Women in Science Laureate for the Asia-Pacific region. She is the founding Vice-President of the Australian Academy of Health and Medical Sciences and a Fellow of the Australian Academy of Science.

Professor Michelle Simmons FAA FRS FTSE is a Laureate Fellow and Director of the Centre of Excellence for Quantum Computation and Communication Technology. She has pioneered unique technologies to build electronic devices at the atomic scale, pushing the boundaries of global research in classical computing and opening up the prospect of developing a silicon-based quantum computer: a powerful new form of computing with the potential to transform information processing. She has received Federation and Laureate Fellowships, been named NSW Scientist of the Year and awarded the CSIRO Eureka Prize for Science Leadership. Recognised with the Pawsey and Lyle Medals from the Australian Academy of Science she was, upon her appointment, one of the youngest fellows of this Academy. In 2014 she was inducted into the American Academy of Arts and Sciences, and was awarded the Feynman Prize in Nanotechnology for 'the creation of the new field of atomic-electronics' in 2016. Recognised as a pioneer in quantum computing by the American Computer Museum, she is Editor-in-Chief of Nature Quantum Information and was the 2017 L'ORÉAL-UNESCO Asia-Pacific Laureate. She is currently the 2018 Australian of the Year.

Professor Peter Visscher FAA FRS is a quantitative geneticist who studies trait variation in populations. He has developed and applied statistical analysis methods to quantify and dissect the contribution of DNA

polymorphisms to variation between individuals, thereby demonstrating the pervasiveness of polygenicity and pleiotropy for quantitative traits and risk of common diseases. His research has applications in medicine, evolutionary biology and agriculture. Peter trained in quantitative genetics at the University of Edinburgh and is currently Professor of Quantitative Genetics at the University of Queensland, Brisbane, Australia. He is an Australian National Health and Medical Research Council Senior Principal Research Fellow and was elected a Fellow of the Australian Academy of Science in 2010.

Professor Jillian Banfield FAA FRS is an earth scientist who studies the structure, functioning and diversity of microbial communities in natural environments and the human microbiome. Her laboratory and collaborators pioneered the reconstruction of genomes from natural ecosystems and community metaproteomic analyses. Through genomics, her group has provided insights into previously unknown and little known bacterial and archaeal lineages, leading to a new rendition of the Tree of Life. She has conducted extensive research on natural and synthetic nanomaterials, exploring the impacts of particle size on their structure, properties and reactivity. Her lab described the oriented attachment-based mechanism for growth of nanoparticles and its implications for development of defect microstructures. She has also studied microorganism-mineral interactions, including those that lead to production of nanomaterials. Jill is a Professor at the University of California, Berkeley, USA, with appointments in the Earth Science, Ecosystem Science and Materials Science and Engineering departments. She leads the Microbial Research initiative within the Innovative Genomics Institute, is affiliated with Lawrence Berkeley National Laboratory and has a position at the University of Melbourne, Australia. She is a Corresponding Member of the Australian Academy of Science.

The Fellowship of the Royal Society are the most eminent scientists, engineers and technologists from or living and working in the UK and the Commonwealth. Each year up to 52 Fellows and up to 10 Foreign Members are elected from a group of about 700 candidates.

Research Infrastructure Investment Plan welcomed but lack of detail concerning

May 15, 2018

The Australian Academy of Science welcomes the Research Infrastructure Investment Plan and its response to the Chief Scientist's National Research Infrastructure Roadmap.

The Academy also welcomes the $393m budget allocation to national research infrastructure over the five-year period (2017/18 – 2021/22) of which $199m was allocated in the 2017/18 FY [Budget paper 2, page 92], however remains concerned that critical infrastructure investment may still be some years away.

President of the Australian Academy of Science, Professor Andrew Holmes said new investment in national research infrastructure is welcome however we remain concerned about the lack of detail as to when funding will be allocated.

"The Academy notes that many of the priorities for new infrastructure outlined in the Research Infrastructure Roadmap will be addressed through funded scoping studies, and will be incorporated in future (two-yearly) iterations of the Investment Plan along with five-yearly reviews of the Research

Upgrading, expanding and connecting many of Australia's research facilities remains critical to finding solutions to challenges in industry, agriculture, health and environment.

Infrastructure Roadmap," Professor Holmes said.

"The Academy looks forward to receiving further detail and certainty.

"Upgrading, expanding and connecting many of Australia's research facilities remains critical to allow the research community to continue seeking solutions to some of our most pressing challenges in industry, agriculture, health and environment," Professor Holmes said.

New Corresponding Members admitted to Academy

May 16, 2018

Professor Ruth J. Williams (United States) and Professor Richard Ellis (United Kingdom) have been admitted to the Australian Academy of Science for outstanding scientific contributions to their fields.

Professor Ruth J. Williams is an Australian-born mathematician at the University of California, San Diego. Her work has had a deep and lasting impact on heavy traffic analysis within the field of stochastic networks. This is the mathematical subject that describes real-world systems running at near-maximum capacity, such as the Internet when congested, assembly lines, customer service centres and freeways at rush hour.

In 2016, Professor Williams was awarded the John von Neumann Theory Prize 'for seminal research contributions over the past several decades, to the theory and applications of stochastic networks/systems and their heavy traffic approximations'.

Professor Richard Ellis is a distinguished astronomer at University College London who has made landmark discoveries over several decades. His main area of research is in observational cosmology, studying the origin and evolution of galaxies, the growth of large scale structure in the universe and the nature and distribution of dark matter.

Professor Ruth J. Williams and Professor Richard Ellis have been admitted to the Academy as new Corresponding Members.

Australian astronomy has benefited greatly from Professor Ellis's intellectual leadership and generous support. He conceived the award-winning '2 degree Field' facility on the Anglo-Australian Telescope that produced some of the highest cited papers in cosmology. This instrument continues to advance Australian astronomy 25 years on. His observational campaigns and creative style opened up the distant Universe to direct observation, inspiring three generations of Australian astronomers to follow in his path.

Australian Academy of Science President, Professor Andrew Holmes, congratulated the new Corresponding Members.

"Professors Williams and Ellis join the Academy as Corresponding Members, a special category within the Fellowship, comprising eminent international scientists with strong ties to Australia who have made outstanding contributions to science," said Professor Holmes.

The Australian Academy of Science will announce the election of 21 distinguished Australian scientists as New Fellows, to mark the start of Science at the Shine Dome, on 22 May 2018.

Australia's leading scientists welcome COAG education report

April 23, 2018

The Australian Academy of Science welcomes the Optimising STEM Industry-School Partnerships: Inspiring Australia's Next Generation Final Report and is calling on Federal and State governments to

The Academy focuses on improving teacher quality through professional learning.

work together to advance the report's 10 recommendations.

The Academy's Education Committee Chair, Professor Ian Chubb FAA, said the Academy strongly supports the push for industry to play a greater and more constructive role in enhancing STEM in Australia's education system.

"We are pleased to see a number of the Academy's recommendations from its submission reflected in the final report," Professor Chubb said.

The Academy strongly backs the report's emphasis on the importance of STEM education to help solve real-world problems, and the development of initiatives at scale.

The Academy particularly welcomes the report's recommendations to 'review senior secondary system and university prerequisites (2)' and 'develop minimal national requirements for discipline specific professional learning to maintain ongoing teacher registration (3)'.

"The Academy has been advocating for some time for the staged reintroduction of at least Year 12 mathematics subjects as prerequisites for all bachelors programs in science, engineering and commerce," Professor Chubb said.

The Academy's Secretary for Education and Public Awareness, Professor Pauline Ladiges FAA, said the Academy's long-standing experience in developing and delivering science and mathematics education programs supports the report's focus on in-service and pre-service teacher professional learning.

"The Australian Academy of Science supports all efforts to collect data that help improve teaching and learning and that guide Australia's future investment in STEM," Professor Ladiges said.

Read the Academy's full submission, including its recommendations **science.org.au/supporting-science/science-policy/submissions-government/optimising-stem-industry-school-partnerships**

The Academy's role in STEM education

Academy offers three STEM education programs to primary and secondary teachers and students: Primary Connections, Science by Doing and reSolve: Mathematics by Inquiry.

Each program includes features to improve teacher quality through professional learning and improve students' skills through a guided inquiry approach that enhances problem solving ability, science literacy and numeracy. Teachers, schools and classrooms that have implemented the programs attest to their impact, and independent program evaluations support this finding. The resources and training are widely available to schools at low or no cost to them. The programs reach hundreds of rural and remote students and teachers.

More information about the programs **science.org.au/learning/schools**

Attenborough supports plan to capture Australia's biodiversity

April 27, 2018

Naturalist, broadcaster and Fellow of the Australian Academy of Science, Sir David Attenborough, is endorsing calls for greater support for the scientists who study and name Australia's plants and animals and other organisms, declaring that Australia's current capacity is not adequate for the magnitude of the task.

Sir David says that at the very time that many species are under greatest threat, funding and other resources allocated to discovering

and documenting species are declining.

"This has serious consequences for the future of life on Earth," he says in the foreword to the Australian Academy of Science and the Royal Society Te Apārangi's 10-year plan for taxonomy and biosystematics, to be launched today at Parliament House, Canberra.

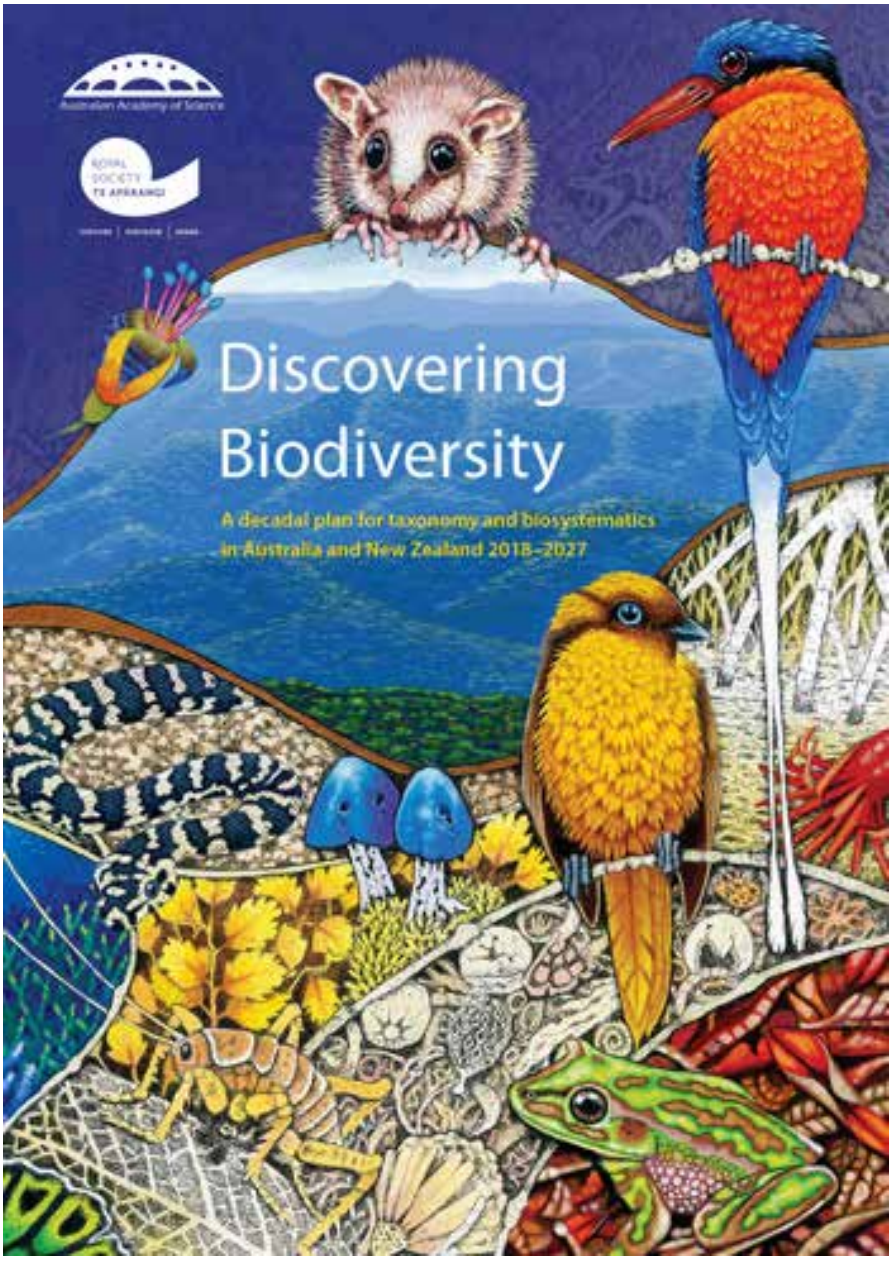
Australia has extraordinarily high levels of biodiversity. It is one of only two developed countries with 'megadiversity' of plant and animal life. However, of the more than 600,000 predicted species in Australia, only 30% have so far been discovered, documented and named.

If Australia doesn't change its approach to documenting our biodiversity, it is likely to take about 400 years to document every plant, animal and other species. In that time, many will go extinct.

A sound understanding of biodiversity is critical, particularly as Australia seeks to achieve both environmental and economic sustainability in the face of rapid environmental change and an extinction crisis that threatens to change the face of Earth.

Taxonomy and biosystematics—the disciplines of biology that discover, document, name and classify species—provide the framework for this much needed sound understanding of life on our planet. Taxonomists literally name the living world.

The Academy's 10-year plan was developed by an expert working group led by Australian plant taxonomist, Dr Kevin Thiele.



Australia is the only developed nation in the world that is also biologically megadiverse. Cover artwork: DH Stacey

He says Australia discovers and names around 2,500 new species per year—more than almost any other country in the world.

Technological revolution

"A substantial increase in the current rate is possible if taxonomists and biosystematists are properly supported to take advantage of the technological revolution underway, in areas such as genomics, machine learning and 3D imaging, which would help speed up the mapping of our unique biodiversity," Dr Thiele said.

"With careful planning and adequate capacity building, Australia could embark on a 'hypertaxonomy' program—we could completely document our biodiversity in a generation. This would put us at the global leading edge—and as the only developed nation in the world that is also biologically megadiverse, this is where we should be."

"Documenting our biodiversity is important—for conservation, biosecurity, agriculture, human and animal health, and to understand the evolution of life on Earth," Dr Thiele said.

President of the Australian Academy of Science, Professor Andrew Holmes, acknowledged that the plan was ambitious in scope.

"Australia and New Zealand are currently world leaders in managing and deploying biodiversity knowledge. This plan seeks to ensure that this leadership is not lost," Professor Holmes said.

"With the appropriate investment and support from government, industry and society we can ensure that future generations, and the community at large, are able to enjoy and celebrate the unique value and immense potential of the plant and animal life in our country."

The Academy would like to acknowledge the support of the Ian Potter Foundation in the development of 'Discovering Biodiversity: A decadal plan for taxonomy and biosystematics in Australia and New Zealand 2018–2027' on behalf of the Australian Academy of Science and the Royal Society Te Apārangi.

Mosquitoes and marine sponges

Mosquitoes and marine sponges highlight the need for enhanced support for taxonomy.

Mosquitoes cause more human deaths than any other animal on earth, yet there are an estimated 200 Australian species that have not yet been named or studied. Some of these may carry serious diseases, but we cannot assess this risk unless they are properly documented.

Marine sponges are extremely rich in compounds that are leading to new drugs and other pharmaceuticals, including new antibiotics that will be needed to help deal with multi-drug-resistant diseases. An estimated 3,000 more species are known but have not yet been documented, and many more await discovery. Any one of these species may provide a drug that saves human lives.

Read Discovering Biodiversity: A decadal plan for taxonomy and biosystematics in Australia and New Zealand 2018–2027 **science.org.au/support/analysis/decadal-plans-science/discovering-biodiversity-decadal-plan-taxonomy**

Australia's leading scientists welcome critical computer infrastructure funding

April 28, 2018

The Australian Academy of Science welcomes the Federal Government's announcement to invest $70 million to upgrade two supercomputers at the Pawsey Supercomputing Centre.

Secretary for Science Policy at the Academy, Professor David Day, said the new funding for the high performance computing facility will allow important research to continue in high priority areas of Australian science, including medical research, astronomy, agricultural science and geoscience.

"Increasingly, scientific research is generating large volumes of data,

Precursor telescopes like the South African MeerKAT and HERA, along with the Murchison Widefield Array and CSIRO's Australian SKA Pathfinder (above) are providing scientists with invaluable knowledge to assist in the design of the SKA's main telescopes over the coming decade. Photo: CSIRO

such as that coming from the Australian SKA Pathfinder—this requires sophisticated processing and analysis so researchers can derive most benefit from their work," Professor Day said.

"Supercomputers, including this facility, are a critical piece of Australia's economic, social and scientific infrastructure.

"The funding commitment provides more certainty for the future of Australia's supercomputing capability, following the funding of the Pawsey's sister facility, the National Computational Infrastructure (NCI), in December last year."

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Young Australian scientists meet Nobel Laureates in Japan

May 16, 2018

Six Australian PhD students and young researchers attended the 10th HOPE meeting with Nobel Laureates held in Tokyo, organised by the Japan Society for the Promotion of Science (JSPS). The program covered chemistry, physics, physiology/medicine and related fields.

HOPE meetings provide a valuable opportunity for the participants to engage in interdisciplinary discussions with Nobel laureates and other distinguished scientists, as well as peers from other regions.

Lecturers at the meeting included Professor Takaaki Kajita, Nobel Laureate in Physics 2015, Professor Ada Yonath, Nobel Laureate in Chemistry 2009, and Sir J Fraser Stoddart, Nobel Laureate in Chemistry 2016.

Dr Aridas was a member of the group that won Best Group Presentation, with the award presented by Dr Kobayashi, the Chair of the 10th HOPE Meeting.

Funding for the participants to attend the meeting was provided by the Australian Government Department of Industry, Innovation and Science.

What the participants learned

The six successful students and young researchers were nominated by the Academy. They were selected by a committee of Academy Fellows from a highly competitive field of 38 applicants.

Ms Lisa Alcock—PhD student, College of Science and Engineering, Flinders University

'The benefit of attending the HOPE Meeting was the opportunity to meet and discuss research with other enthusiastic scientists from similar and different fields. This allowed for inter-disciplinary discussions which assists in applying my own research to other fields, particularly medicine and physiology. This type of interaction is not typical since conferences and meetings are usually field specific.'

Dr James Aridas—The Ritchie Centre, Hudson Institute of Medical Research, Monash University

'The meeting was an excellent opportunity for PhD candidates and early post-docs to independently

Australians James Aridas, Kathryn Leslie and Paddy Dempsey with the Japanese Science Minister Yoshimasa Hayashi and his wife Professor Yuko Hayashi at the HOPE meeting in March. Not in the photo are Lisa Alcock, Tara Boulding and Jacquiline Romero.

expand their scientific experience from their own scientific community, and to explore the potential utility that world-class researchers in other fields of science may bring to their own research.'

Ms Tara Boulding—Biomedical Sciences, University of Canberra

'The most important thing I gained from this meeting is the desire to conduct the best possible science I can—specifically, to make decisions that will allow me to be a better scientist and to push boundaries in my field. I would like to thank the Australian Academy of Science for this amazing, once in a lifetime opportunity.'

Dr Paddy Dempsey—Baker Heart and Diabetes Institute, and Swinburne University of Technology

'The unique experiences I gained from the meeting were that I was pushed outside of my comfort zone in various ways, from discussing science with peers and colleagues from a variety of disciplines and cultural backgrounds (something I would not usually do), to thinking more about the bigger picture possibilities and challenges of science, including its future within modern society.'

Ms Kathryn Leslie—School of Chemistry, University of Sydney

'One of the main things that I hope will influence my own future research is the affirmation of the value of basic science. In a climate that often values science with clear and immediate applications, it was encouraging to hear from Nobel laureates how some of their discoveries have influenced and contributed so positively to the world, without knowing at the outset how they would do so.'

Dr Jacquiline Romero—University of Queensland

'Hearing the lecturers talk about the science that they faced then, and how the field looks like at present, made me realise just how dynamic science is! The opportunities then are not the same opportunities now. In a career that will span 40 or so years in average, really, the most important skill is the ability to adapt and navigate yourself in an ever-changing sea.'

Video supports vaccinations in preparation for flu season

May 16, 2018

The Academy has produced a video reinforcing the importance of getting vaccinated each year just before the flu season hits **facebook.com/AustralianAcademyofScience/videos/1645849068825951/**. Nearly 800 people died from the flu in Australia last year, most of them aged over 65, mainly due to a new strain of the influenza virus that especially affects the elderly.

The video was promoted widely on social media during World Immunisation Week in April, and included in media articles including 10 News Corp websites, reaching an estimated audience of more than three million. To support the video, social media posts also pointed to the Academy's definitive information on the science of immunisation, which answers six big questions **science.org.au/learning/general-audience/science-booklets/science-immunisation**:

- What is immunisation?
- What is in a vaccine?

Chairs of the National Committees for Science met with Academy representatives in April.

- Who benefits from vaccines?
- Are vaccines safe?
- How are vaccines shown to be safe?
- What does the future hold for vaccination?

National Committees explore future of Australian science

May 16, 2018

A recent meeting of the chairs of the Academy's 22 National Committees for Science brought together representatives from the breadth of Australian science disciplines to make connections and identify interdisciplinary concerns and opportunities.

The chairs explored potential themes for future strategic plans of various science disciplines, and heard about the vision and aims of the Academy and the programs currently underway.

They also provided input into planning for a whole-of-science strategy—long-, medium- and short-term goals for education, funding, collaboration with industry, infrastructure and people in science.

Ms Sue Weston, Deputy Secretary of the Australian Government Department of Industry, Innovation and Science, attended a dinner following the meeting.

Each National Committee aims to foster a branch or theme of natural science in Australia and to serve as links between Australian and overseas scientists. They advise the Academy's Council on Australia's representation for the unions and multidisciplinary bodies of the International Council for Science (ICSU) and other international bodies.

Gender gap in science—2018 global survey of mathematical, computing and natural scientists

May 16, 2018

A major global survey is aiming to answer a big question: How can we measure and reduce the gender gap in science?

The Global Survey of Mathematical, Computing, and Natural Scientists is being run by the International Council for Science and is open until 31 October 2018. The survey is targeting 45,000 respondents in multiple languages to develop a better knowledge of the gender gap in global science.

The survey will explore comparisons across regions, countries, disciplines, level of development of the country, sector of employment and age. It will also look at scientists' development of interest in science, experiences in education and careers, family support, access to resources needed to conduct science, and opportunities to contribute to the scientific enterprise.

Take the survey
icsugendergapinscience.org/work-packages/global-survey/

The Academy has two awards specifically to support female scientists: the Dorothy Hill Medal and the Nancy Millis Medal. It also is strong supporter of SAGE, a national

Associate Professor Tracy Ainsworth is the recipient of the Academy's 2018 Dorothy Hill Medal, an award that supports female early-career researchers in the Earth sciences.

program that aims to promote gender equity and gender diversity in STEMM.

Opportunities for scientists—May 2018

May 16, 2018

In addition to the Academy's research grants, travelling fellowships and research conference funding, the following opportunities are now open for applications and nominations.

Australian–French Entrepreneurship Challenge (closing date extended)

The call for applications to participate in the third Australian–French Entrepreneurship Challenge has been extended to 9 am (AEST) Monday 4 June 2018.

The Australian–French Entrepreneurship Challenge is designed to bring together creative minded PhD candidates to brainstorm innovative ideas right through from concept to creation—all in the space of 24 hours. The third edition of the challenge is organised by Macquarie University, with the support of the Australian Academy of Science, the French Embassy in Australia and the Australian and French business communities.

More information on the Australian–French Entrepreneurship Challenge **science.org.au/opportunities/travel/grants-and-exchange/australian-french-entrepreneurship-challenge**

Applications close 4 June 2018

Visit to the National Institutes of Health in the USA by a junior scientist

The call for applications from scientists 30 years of age or under to visit the National Institutes of Health in the USA in 2019 is now open. Proposals in any health-related field of natural science will be considered, and only Australian citizens and permanent residents living in Australia are eligible to apply. At time of application, applicants should be either in the first two years of a PhD degree or equivalent, have completed a Masters or Bachelors with Honours degree, or be in the first year of a Masters or Bachelors with Honours degree.

More information on the visit to the NIH **science.org.au/opportunities/travel/grants-and-exchange/visit-national-institutes-health-usa-junior-scientist**

Expressions of interest close 12 June 2018

Falling Walls Lab Australia 2018 (closing date extended)

The call for applications to participate in Falling Walls Lab Australia 2018 has been extended to 12 June 2018.

The Academy invites applications from Australian researchers, postdocs and students, entrepreneurs, engineers and innovators working in Australia to

attend Australia's Falling Walls Lab in 2018. The Lab will be held on Tuesday 11 September at the Shine Dome, Canberra. Twenty contestants will be selected to participate in the challenge, each giving a three-minute presentation on their research, business model, social initiative or idea based on the 'Which walls will fall next' concept.

More information on Falling Walls Lab Australia **science.org.au/opportunities/travel/grants-and-exchange/falling-walls-lab-australia**

Applications close 12 June 2018

Resilient Australia Award

The Resilient Australia Awards is a nationwide program to recognise and promote initiatives that strengthen community disaster resilience.

More information on the Resilient Australia Awards **aidr.org.au/programs/resilient-australia-awards**

Applications close 31 May 2018

The Georgina Sweet Awards for Women in Quantitative Biomedical Science

Up to two awards of $25,000 will be made each year to Australian female researchers who demonstrate excellence in the area of quantitative biomedical science.

More information on the Georgina Sweet Awards for Women in Quantitative Biomedical Science **mdhs.unimelb.edu.au/equity-and-diversity/georgina-sweet-laureate-fellowship#awards**

Applications close 31 May 2018

Eric and Sheila Samson Prime Minister's Prize

The Eric and Sheila Samson Prime Minister's Prize is awarded annually to individual(s) for global innovation or a scientific or technology breakthrough in the field of alternative fuels for transportation. The recipient(s) can be citizens of any country. The prize is US$1,000,000.

Eric and Sheila Samson Prime Minister's Prize **pimages.most.gov.il/PMA/**

Nominations close 31 May 2018

RACI National Awards 2018

The Royal Australian Chemical Institute has awards in five categories: Academia, Distinction, Education, Women in Chemistry and Young Scientists.

More information on the RACI National Awards 2018 **raci.org.au/raci-news/national-awards-2018**

Applications close 15 June 2018

BBVA Foundation Frontiers of Knowledge Awards

Awarded in basic sciences (physics, chemistry, mathematics), biology and biomedicine, information and communication technologies, ecology and conservation biology, climate change - €400 000.

More information on the BBVA Foundation Frontiers of Knowledge Awards **bbva.com/en/frontiers-knowledge-awards-celebrate-their-10th-anniversary/**

Applications close 28 June 2018

See more external awards and prizes **science.org.au/opportunities/recognition/external-sources-recognition**