

Message from the Chief Executive—October 2018

October 29, 2018

The Academy is delighted that former Academy President Emeritus Professor Kurt Lambeck AO FAA FRS has been **awarded the Prime Minister's Prize for Science**¹ for 'transforming our understanding of our living planet'. Professor Lambeck was elected to the Academy in 1984 and was President from 2006 to 2010. His work has spanned the globe and this high recognition of his achievements also demonstrates the value of investing in international collaborations between scientists, institutions and nations.

The Academy has partnered with the Australian Department of Health to launch a series of videos, articles and images to dispel vaccination myths and to promote the benefits, safety and science of immunisation. This important series is designed to raise public awareness about the importance of immunisation and to keep immunisation rates on the rise. The Federal Health Minister, the Hon Greg Hunt **has spoken about record immunisation rates**² but



Academy Chief Executive Anna-Maria Arabia introducing the Minister for Industry, Science and Technology, Karen Andrews, at the Academy's breakfast following the Prime Minister's Prizes for Science event.

there is still work to do, especially in regions that are below the national average for immunised children.

Over the last six weeks the Australian Academy of Science, together with the Australian Academy of Technology and Engineering, have held consultations in every state and territory, reaching some 400 people, to inform the development of the Decadal Plan for Women in STEM. The decadal plan will benefit from additional input via submissions, surveys, and further consultations. You can **read more about it in this month's newsletter**³.

Finally, it is not too late to help develop a national framework and strategy for reaping the benefits of big data. You **can answer our ten questions**⁴ but please do so by 31 October.

Enjoy reading the October newsletter.

Anna-Maria Arabia

1 www.science.org.au/node/10404

2 www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2018-hunt181024.htm

3 www.science.org.au/node/10402

4 www.science.org.au/node/10400



Emeritus Professor Kurt Lambeck has been awarded the Prime Minister's Prize for Science for 'transforming our understanding of our living planet'. Photo: Prime Minister's Prizes for Science/WildBear

Former Academy President wins PM's Prize for Science

October 17, 2018

Former Academy President Emeritus Professor Kurt Lambeck AO FAA FRS has been awarded the \$250 000 Prime Minister's Prize for Science for 'transforming our understanding of our living planet'.

Professor Lambeck received the prize for his research that has revealed how our planet changes shape and the influence this has on sea levels, the movement of continents and the orbits of satellites.

His original work in the 1960s enabled accurate planning of space missions. It led him to use the deformation of continents during the ice ages to study changes deep in the mantle of the planet. It also led to a better understanding of the impact of sea level changes on human civilisation in the past, present and future.

"The Earth is remarkable," Professor Lambeck said.

"It has this wonderful record of its history going back to almost its very beginning. Almost everywhere you look, you learn



Watch 'The Prime Minister's Prize' Curious video: youtu.be/Ft90sMEJqV4

something new about what's been going on in our planet. It's a constant journey of discovery."

Professor Lambeck guided the development of a comprehensive geodetic monitoring system called the AuScope network. Established with the support of the National Collaborative Research Infrastructure Strategy (NCRIS), the network consists of about 100 GPS stations, radio telescopes and laser tracking systems, and enables us to track our location with sub-centimetre accuracy across the country.

Professor Lambeck is now working with archaeologists in Europe, and with precision carbon dating equipment at the Australian National University, to piece together a more precise understanding of past sea levels.

See the full list of recipients of the 2018 Prime Minister's Prizes for Science⁵

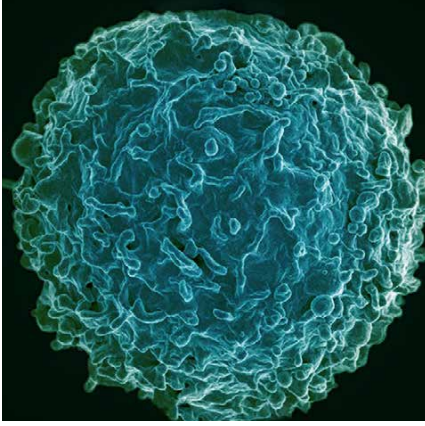
Academy breakfast for prize winners

In line with its annual tradition, on the morning following the Prime Minister's Prizes the Academy hosted a breakfast for the prize winners at the Shine Dome. There was no sign of a late night: conversations were energetic and convivial. Attendees included Academy President Professor John Shine, the Minister for Industry, Science and Technology Ms Karen Andrews, and several of her parliamentary colleagues. Congratulations to all the prize winners!



The Academy hosted a full house at the Shine Dome the morning after the Prime Minister's Prizes for Science. Photo: Department of Industry, Innovation and Science

5 www.science.gov.au/community/PrimeMinistersPrizesforScience/Pages/default.aspx



Immune system B cell. Credit: NIAID (CC-BY-2.0)

The importance of immunisation and a message for everyone

October 02, 2018

The Australian Academy of Science has joined with the Australian Department of Health to launch a series of videos, articles and images to dispel vaccination myths and to promote the benefits, safety and science of immunisation.

Secretary for Science Policy at The Australian Academy of Science, Professor David Day FAA, said the updated content is aimed at addressing some of the prevailing views toward immunisation revealed in the **latest survey of Australians' beliefs and attitudes towards science.**⁶

"Respondents from the survey who said childhood vaccination should not be compulsory cited reasons such as '(the) reaction can be harmful / allergic in some cases (18%) and '(I) don't trust vaccines / they don't always work / they're not necessary (12%)," Professor Day said.

"We hope that the misunderstandings about immunisation that still exist in some parts of the community can be addressed through this new series.

"On a positive note the survey found that more than half of the respondents who supported compulsory vaccination for children cited herd immunity and other related ideas as a reason for their position. Herd immunity and how it works is one of the topics clearly explained in our video series," Professor Day said.

Topics explored in each video, article and image include:

1. Immunisation overview
2. What is immunisation?
3. What's in a vaccine?
4. Who benefits from vaccination?
5. How safe are vaccines (and how do we know)?
6. What's the future of vaccination?

The content is based on the **Academy publication: The Science of Immunisation: Questions and Answers.**⁷

The content has been rigorously fact-checked by Academy Fellows and features some of Australia's leading experts in the field including:

- Laureate Professor Peter Doherty AO FAA, Doherty Institute, who won a Nobel Prize in

Physiology and Medicine in 1996 for his contributions to the science of immunisation.

- Professor Anne Kelso AO FAA, CEO of the National Health and Medical Research Council
- Professor Robert Booy, immunologist, Westmead Institute for Medical Research
- Professor Ian Frazer FAA, Gardasil vaccine co-founder, University of Queensland
- Professor Julie Bines, lead rotavirus researcher at the Murdoch Children's Research Institute

Watch the videos and read the articles.⁸

Find out more from the Department of Health.⁹

Academy celebrates one million likes on Facebook

October 04, 2018

What is an equinox? Why do you need a flu shot every year? Does the world have enough food?

These are just some of the questions the Australian Academy of Science has asked and answered since launching it's an ambitious new initiative to connect more people with science.

In 12 months the Academy has produced more than 200 breaking news and other science videos and articles resulting in one million likes on its Facebook page, from a starting point of 9000.

6 science.gov.au/community/Documents/REPORT-SCAPA172001-CPAS-poll-2018.pdf

7 www.science.org.au/immunisation

8 www.science.org.au/immunisation

9 www.health.gov.au/immunisation

The public's appetite for trusted and credible scientific information from the Academy is backed up by the University of Canberra's **Digital News Report: Australia 2018**¹⁰, which found 65% of Australians are concerned about what's real and what isn't when it comes to online news.

All of the Academy's content is thoroughly checked by scientists and Fellows to make sure only accurate, well researched information is shared.

The Academy's impact is global and it is one of a select group of organisations to be verified as a trusted education account on China's social media platform, Weibo. Its Chinese language content has been viewed nearly 13 million times.

Watch the videos and read the articles on our website¹¹, and like and follow us on social media:

- **Facebook**¹²
- **Twitter**¹³
- **Instagram**¹⁴
- **YouTube**¹⁵



Watch 'The science of 1 Million' Curious Video: youtu.be/ruKMLPOgWYw

Downward-looking telescope will unlock Australia's mineral wealth

October 15, 2018

The Australian Academy of Science is proposing the development of a new 'downward-looking telescope' that could look at least 300 km beneath Earth's surface to unlock Australia's hidden mineral wealth.

The proposal is one of several in a 10-year plan for Australian Geoscience (2018–27) launched today by the Academy's National Committee for Earth Sciences.

The 10-year plan highlights how the world's shift towards mobile device technology, renewable energy sources and electric cars will involve massive increases in demand for copper, cobalt, gold, rare-earth elements and other specialty metals.

The Committee's Chair, Professor Sue O'Reilly AM FAA, said one of the challenges for Australian geoscience in the coming decade is to ensure the right infrastructure is in place to know how and where to explore for the critical resources needed for Australia's future.

"This is where the downward-looking telescope comes in," Professor O'Reilly said.

"A piece of infrastructure like this would transform our minerals sector by making deep Australia visible. It would give us a new understanding of the vertical makeup of the



Prince Regent National Park, WA – Credit: NASA/Earthkam.org

continent and allow us to direct our mineral exploration efforts in the two-thirds of Australia that aren't currently cost-effective to explore."

"By 2030, global demand for cobalt will be 47 times what it was in 2016 so unless we can become self-sufficient in this strategic metal, Australia may be held to ransom with massive price increases and chronic shortages," Professor O'Reilly said.

"This exemplifies the need to generate new geoscience knowledge that will allow us to explore successfully in the covered areas of Australia."

The plan also draws attention to the weakness in geoscience in Australia's education system.

"Geoscience is largely absent in Australia's school system because of a lack of teachers with qualifications in geoscience. Geoscience should be embedded as a core subject within every level of Australian STEM education and earth science graduates should be incentivised to obtain education qualifications," Professor O'Reilly said.

10 www.canberra.edu.au/research/faculty-research-centres/nmrc/digital-news-report-australia-2018

11 www.science.org.au/curious/

12 www.facebook.com/AustralianAcademyofScience/

13 twitter.com/Science_Academy

14 www.instagram.com/ausacademyofscience/

15 www.youtube.com/user/ScienceAcademyAu

The plan also calls for an expansion of Australia's national computational capability to ensure that Australia retains and extends its lead in geoscience simulation and modelling capability.

The National Committee for Earth Sciences acknowledges the support of the Australian Research Council, Geoscience Australia, the University of Melbourne, the University of Queensland, Macquarie University and the Australian Geoscience Council in the development of the plan.

[View a copy of the decadal plan](#)¹⁶

The 'big data' revolution

October 29, 2018

Australian research stands to reap enormous benefits from the coming revolution in 'big data'.

Big data is not just massive structured data sets. It is also large integrated data sets bringing together elements such as spatiality, facial recognition and natural language processing—all of which open potentially exciting opportunities for researchers.

The Academy is leading the development of a national framework and strategy through its project, **Big data in Australian research: issues, challenges and opportunities**¹⁷. By consulting across disciplines and connecting with international big data initiatives, the project will identify common and discipline-specific practices, challenges and strategic developments, map existing data science capability and infrastructure within and across disciplines, identify opportunities for efficiencies, and assess technology, infrastructure, training and collaboration priorities for the future.

The project's Expert Working Group is jointly led by Academy Fellows Professor Michael Barber and Associate Professor Jane Elith, together with the Academy's **National Committee for Data in Science**¹⁸.

Ten questions

The report to come out of the project will be informed by the contributions of a broad range of stakeholders through targeted interviews and written submissions.

As part of the consultations, the Expert Working Group has developed ten questions on which it would particularly like to hear views, with responses sought by **31 October**.

[More about the big data project](#)¹⁹

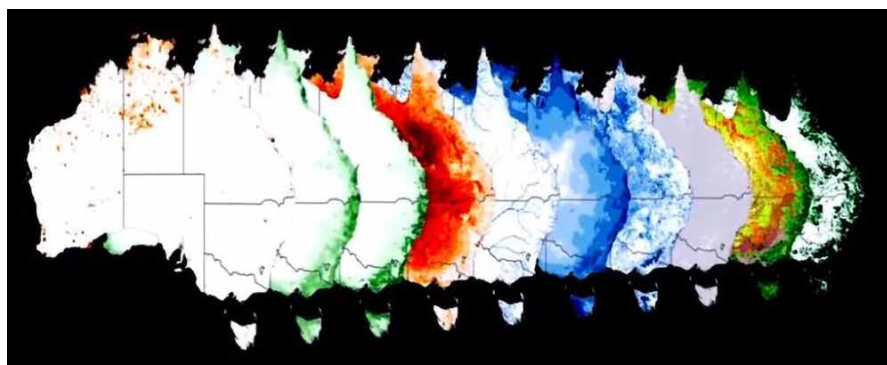
[The ten questions](#)²⁰

Feeling neighbourly? Apply now for a Regional Collaborations grant

September 28, 2018

Applications are now open for eligible Australian research organisations and businesses who wish to apply for funding for projects and/or workshops under round two of the Regional Collaborations Programme.

The programme, administered by the Australian Academy of Science, will fund Australian participants from eligible organisations to collaborate with regional and international science, research and innovation partners on solutions to shared regional challenges within the Asia-Pacific region. The latest



Big data includes massive structured data sets and large integrated data sets.



Dr Sarah Hamilton and Dr Nani Hendiart

16 www.science.org.au/node/3391

17 www.science.org.au/supporting-science/science-policy-and-sector-analysis/decadal-plans-science/big-data-australian

18 www.science.org.au/supporting-science/national-committees-science/national-committee-data-science

19 www.science.org.au/supporting-science/science-policy-and-sector-analysis/decadal-plans-science/big-data-australian

20 www.science.org.au/files/userfiles/support/reports-and-plans/in-progress-decadal-plans/Big-data-ten-questions.pdf

funding round was launched by the Minister for Industry, Science and Technology Karen Andrews.

Funding of up to \$1.38 million is available for collaborative, multi-partner projects. Projects are expected to commence after 1 April 2019 and must be completed by 31 December 2020.

Funding of up to a total of \$250 000 is available for non-project aligned, multi-partner workshops. Up to \$100 000 per workshop is available for workshops held between 1 April 2019 and 31 December 2020.

The first funding round provided five research projects with a total of just under \$900 000. Nearly \$2.5 million of matched funds by project partners was invested in the projects, close to a 3:1 return.

Dr Sarah Hamylton from the University of Wollongong was awarded \$45 000 over three years to develop institutional capacity for regional monitoring of coastal climate change impacts through remote sensing technologies.

“To be neighbourly is to be helpful, kind and supportive to those in your vicinity. This was the spirit adopted for a recent workshop I hosted on the Central Great Barrier Reef with support from the Regional Collaboration Program,” Dr Sarah Hamylton said.

Masters and PhD student participants from Indonesia’s Hasanuddin University are now incorporating skills covered during the workshop into their projects in the Spermonde Archipelago

(Indonesia), with ongoing guidance from Dr Hamylton, who plans to visit their field site next year.

The deadline for applications for round two funding is 30 November 2018.

More information on the Regional Collaborations Programme²¹

Academy announces winners of latest research funding September 27, 2018

Ms Lisa Hunt from the University of Adelaide is the recipient of the Academy’s 2019 Moran Award for History of Science Research.

Ms Hunt, a History PhD candidate, will study the development of Australian science during a period of significant change (1945 to 1963), and its impact on popular perceptions of science in Australia. The Snowy Mountains Scheme, Australia’s First Nuclear Reactor and the Parkes Telescope will be used as case studies.

Ms Hunt said in each case, an historical account of the scientific development will be constructed from existing secondary sources, along with an analysis of primary sources obtained from institutional archival records and public records such as parliamentary proceedings.

“A longitudinal study of public discourse and popular culture such as print media, educational films, television and radio segments produced between 1939 and 1963 will also be undertaken, to provide insights into popular



Ms Lisa Hunt and Dr Grace Muriuki

attitudes toward these important scientific developments over time,” Ms Hunt said.

The Moran Award for History of Science Research is aimed at postgraduate students and other researchers with expertise in the history of Australian science. **More information about the Moran award**²².

Dr Grace Muriuki, Research Fellow at the University of Queensland, is the recipient of a grant from the Academy’s 2019 WH Gladstones Population and Environment Fund.

Dr Muriuki will use the grant to study food security in rural and remote indigenous communities of The Pilbara and the potential for resource corridors in local food systems.

“It is well-known that the benefits and burdens of mining are distributed unevenly within remote communities. Studies have shown differential spatial patterns in economic and social dimensions of employment and income, housing access, education and skills training, public services, and non-mining business growth among different communities within resource-rich environments,” Dr Muriuki said.

21 science.org.au/opportunities/travel/grants-and-exchange/regional-collaborations-programme

22 www.science.org.au/opportunities/research-funding/moran-award-history-science-research

“The research is aimed at identifying actions to maximise the potential of targeted corridors to disrupt systemic barriers to food insecurity in select remote communities.”

The WH Gladstones Population and Environment Fund offers support for empirical research into how the size, distribution, material aspirations and other characteristics of Australia’s population are likely to affect our environment. **More information about the fund**²³.

Future Earth Australia focuses on Sustainable Development Goals

October 29, 2018

Future Earth Australia is partnering with a number of its members and affiliates to host early-career researcher workshops around the country, and recently hosted its first symposium in Melbourne in partnership with the Sustainable Development Solutions Network Australia, New Zealand and Pacific on **Integration across the SDGs and the Role of Research**²⁴.

Future Earth Australia is the Australian arm of a global research framework that brings together



Watch the Future Earth SDG’s video:
youtu.be/IPFvEbcCM9o

the world’s leading thinkers in business, public administration, the humanities and social sciences and communities to create long-term solutions to global challenges. Supported by the Academy, it has a sustainability focus and constantly integrates the work it does across the **UN Sustainable Development Goals**²⁵.

The group has undergone a number of changes in the past six months. Under the new direction of Dr Tayanah O’Donnell, the Future Earth Australia team has grown to include Dr Joanne Banks, Rebecca Palmer-Brodie and Sarah Crowe.

Find out more about Future Earth Australia²⁶

Subscribe to receive emails about Future Earth Australia²⁷

Women in STEM, and the future of agriscience

October 29, 2018

National consultations underway on Women in STEM Decadal Plan

With support of the Australian Government, the Academy of Science is developing a 10-year strategic plan to improve engagement, involvement and retention of women in STEM. The decadal plan will examine barriers and enablers from early schooling through to senior career levels in academia and industry STEM sectors, and will include a detailed implementation plan to advance the recommendations.



National consultations on the Women in STEM Decadal Plan are well underway.

The Academy is working closely with the Australian Academy of Technology and Engineering on this project, and has convened an Expert Working Group comprising representatives from industry, academia, government and school education to provide advice and guidance.

National consultation on the plan commenced in September, and meetings have been well attended by STEM sector representatives from around Australia. Based on the feedback from consultations and an online discussion paper, an exposure draft is scheduled for November. The plan will be finalised and launched at Australia’s Parliament House in March next year, following which the two Academies will commence an implementation process, supported by the Australian Government, through to mid-2020.

Find out more about the Women in STEM Decadal Plan²⁸

23 www.science.org.au/opportunities/research-funding/wh-gladstones-population-and-environment-fund

24 www.science.org.au/supporting-science/future-earth-australia/events/integration-across-sdgs-and-role-research

25 www.un.org/sustainabledevelopment/sustainable-development-goals/

26 www.science.org.au/supporting-science/future-earth-australia

27 newsletter.science.org.au/h/i/CEE829C815F753B8

28 www.science.org.au/support/analysis/decadal-plans-science/decadal-plan-women-stem

Future of Australian Agriscience meeting

The Academy held a roundtable meeting on agricultural science in September, bringing together representatives from more than 30 academic, industry and public sector organisations to discuss key challenges and priorities for agricultural science and innovation in Australia.

Delegates heard from keynote speaker and Academy Fellow Professor Adrienne Clarke, who described her pioneering experience founding the successful Australian Agritech company Hexima. Secretary of the Commonwealth Department of Agriculture and Water Resources Mr Daryl Quinlivan also spoke.

The Future of Australian Agriscience meeting was hosted by two Fellows: Chair of the National Committee for Agriculture, Fisheries and Food Professor Barbara Howlett and Secretary, Science Policy Professor David Day. It followed the successful launch of the **Agricultural sciences decadal plan**²⁹ in 2017.

Read the communique from the meeting³⁰

Leading scientist presented with Haddon Forrester King Medal

October 29, 2018

The 2018 Haddon Forrester King Medal was presented to **Professor David Cooke**³¹ in September,



Haddon Forrester King Medal recipient Professor David Cooke (centre), with Academy Vice-President Professor Jim Williams (left) and Rio Tinto Chief Geologist Mr Paul Agnew.

for the application of science to understanding the origin and discovery of mineral deposits.

The Haddon Forrester King Medal is awarded to scientists for original and sustained contributions to Earth and related sciences. The award is for work of particular relevance to the discovery, evaluation and exploitation of mineral deposits, including the hydrocarbons. The medal is sponsored by Rio Tinto.

Professor Jim Williams, Vice President of the Academy, awarded the medal to Professor Cooke at the Academy's Shine Dome. After receiving his medal Professor Cooke spoke on 'New advances in geochemical exploration—detecting the subtle, but giant, geochemical footprints of porphyry copper and gold deposits using mineral chemistry'. Mr Paul Agnew, Chief Geologist, Technical Support and Technology Development,

Rio Tinto Exploration, concluded the dinner with an appreciation of Professor Cooke's work from an industry perspective and its strong application in Rio Tinto's copper-gold exploration.

Professor Cooke is the Director of CODES, the Centre for Ore Deposit and Earth Sciences, and Director of the Australian Research Council's Industrial Transformation Research Hub for Transforming the Mining Value Chain.

Professor Cooke's main research theme is the geological, chemical and fluid processes that produce the world's major copper–gold deposits, known as 'porphyry copper deposits'. His recent research has focused on documenting changes in the chemistry of minerals surrounding these magmatic copper–gold deposits. Particular minerals retain trace elements in relative abundances which vary in patterns set by the

29 www.science.org.au/support/analysis/decadal-plans-science/decadal-plan-agricultural-sciences-2017-2026

30 www.science.org.au/news-and-events/news-and-media-releases/communique-australias-agriscience-future

31 www.science.org.au/opportunities-scientists/recognition/honorific-awards/honorific-awardees/2018-awardees#king

temperature gradient and wall rock compositions. Systematic, rapid sampling of a prospective area can define mineral chemical vector techniques that companies can employ to assist targeting of drill holes designed to discover deeply buried deposits.

The importance of this work has been recognised by many companies that now employ the techniques as a routine procedure in exploration for magmatic copper–gold deposits.

As part of his award Professor Cooke is delivering lectures in Melbourne, Canberra and **Townsville**³². The lecture tour was made possible through additional funding from Rio Tinto.

More about the Haddon Forrester King Medal³³



Watch 'The world as my office' Curious video featuring Professor David Cooke: youtu.be/MrFJY8I_Nug

Independent selection of research grants essential for integrity of Australia's research system

October 26, 2018

The Australian Academy of Science expresses its concern that Ministerial veto has been made



The Academy strongly supports independent selection of research grants in Australia.

on eleven grant applications recommended for funding by the Australian Research Council (ARC).

Grants for research must be allocated according to the scientific merit of the proposal as judged by peer review. Political review is inappropriate, as it gives the appearance of political interference in the internationally accepted practice of peer review in science said Academy President Professor John Shine.

'Appropriately, governments align funding schemes with national priorities and strategic objectives and they are able to indicate such criteria when calling for proposals. However, within those criteria, scientific merit, as identified by independent peer review, should remain the central basis for allocating research support.'

'In exchange for responsible and socially-conscious conduct in research, academic researchers should be free to pursue lines of enquiry they consider meaningful and important. Indeed researchers are trained to identify problems or gaps in the academic literature and determine the best and most rigorous way to investigate that problem.'

'Much of the value provided by research to policy makers and the public is due to its unbiased and independent nature and this should not be eroded,' Professor Shine concluded.

To blink or not to blink—Academy Fellow delivers 2018 Lloyd Rees Lecture

October 29, 2018

Academy Fellow Professor Paul Mulvaney delivered the 2018 Lloyd Rees Lecture recently on **Excitons in nanocrystals—to blink or not to blink**³⁴.

Professor Mulvaney discussed some of the basic photophysics and chemistry of semiconductor nanocrystals. These materials have long been touted as building blocks for future optoelectronics, as components in third-generation solar cells, tunable LEDs and miniature lasers, and for single-molecule tracking especially in biological environments.



Professor Paul Mulvaney spoke on excitons in nanocrystals for the Lloyd Rees Lecture.

32 www.science.org.au/node/10358

33 www.science.org.au/opportunities-scientists/recognition/honoric-awards/career-awards/haddon-forrester-king-medal

34 www.science.org.au/news-and-events/events/2018-lloyd-rees-lecture-excitons-nanocrystals-blink-or-not-blink

'Blinking' is the name given to the fluctuations in luminescence observed at the single quantum dot level, and to understand some of the core challenges it is necessary to understand blinking in detail. Professor Mulvaney discussed how this can be investigated and analysed, and how excitons in these materials can be manipulated by temperature, pressure, energy transfer and doping.

According to the lecture organiser, Academy Fellow Professor Peter Hannaford, Professor Mulvaney's lecture was 'brilliant'. The Academy's Victorian Fellowship regional chair, Professor David Vaux, chaired the event, and Professor Mulvaney was thanked by Dr Danielle Kennedy from CSIRO Clayton.

More about the Lloyd Rees Lecture³⁵

International update: European research funding, and collaboration with Colombia

October 29, 2018

European Research Council promotes funding opportunities for Australian researchers

Opportunities for Australian researchers was the focus of a presentation and Q&A session by the President of the European Research Council (ERC), Professor Jean-Pierre Bourguignon, at the Academy in late September.

Professor Bourguignon highlighted various ERC funding opportunities available for Australian early- and mid-career and senior researchers



(from left) Academy Chief Executive Ms Anna-Maria Arabia with Mr Michael Pulch, Professor Elain Sadler and Professor Jean-Pierre Bourguignon at the presentation on ERC funding opportunities for Australian researchers.

in all areas of science including social sciences and humanities. Since its creation in 2007, the ERC has awarded more than 8500 grants, with the total ERC 2014–20 budget being €13 billion. The event garnered significant interest, with more than 80 people from universities, funding agencies, government departments and embassies attending.

Prior to the event, Professor Elain Sadler, the Academy's Foreign Secretary, met with Professor Bourguignon and Mr Michael Pulch, head of the Delegation of the European Union in Australia, to discuss possible areas of research collaboration between Australia and the EU.

Australian and Colombian science academies explore potential collaboration

The Australian and Colombian science academies met recently in Canberra to explore potential areas of collaboration, particularly in the area of water management.

The Australian Academy of Science's Secretary Physical Sciences, Professor Jim Williams, hosted the

visit to the Academy by Professor Enrique Forero, President of the Colombian Academy of Sciences and Professor Gabriel Roldon, an expert on water management from the Catholic University of Colombia and a member of the Colombian Academy. The group was joined by the Australian National University's Professor Saul Cunningham, Director of the Fenner School, and Dr Elisabeth Mayer, Director of the Australian National Centre for Latin American Studies.

The two academies also shared the work that they are undertaking in their own countries.



(from left) Professor Jim Williams, Professor Gabriel Roldon and Professor Enrique Forero were part of a group that explored potential area of collaboration between the Australian and Colombian science academies.

35 www.science.org.au/opportunities-scientists/conference-lecture-funding/lloyd-rees-lecture



Coming events— November– December 2018

October 29, 2018

Canberra

*Collaboration Across Boundaries
2018 (a Theo Murphy Initiative)*

Date: 4 December

**Venue: University House,
Australian National University**

The Collaboration across Boundaries 2018 Conference, supported by the Theo Murphy Initiative (Australia), will create a space where researchers from diverse disciplines and sectors can meet and explore opportunities and collaborations that can further their ideas.

More about this event³⁶

When Life Ends

Date: 5.30–7 pm, 11 December

**Venue: The Shine Dome,
Gordon St, Acton**

Save the date! The Science of Us series is investigating the science of our lives, our health and our wellbeing, delving into fertility, addiction, mental health, ageing and more.

More information on this final event in the series coming soon.

Bookings opening soon³⁷

Melbourne

*The Science of Sport: Women
on and off the field*

Date: 5.30–7.15 pm, 28 November

Venue: AAIM Park, Melbourne

This event is free, but
booking is essential.³⁸

Sydney

*Cooling Sydney Hack (a
Theo Murphy Initiative)*

Date: 12 December

**Venue: Western Sydney
University, Parramatta**

Cooling Sydney Hack is a fast-paced and engaging full-day event that seeks to inspire and showcase solutions to address urban heat, and present strategies and actions to keep Sydney cool. Anyone interested in contributing to solutions to urban heat in the Sydney Basin is welcome.

More about this event³⁹

Opportunities for scientists—October 2018

October 29, 2018

Academy opportunities

Theo Murphy Initiative (Australia)

Applications close 11

November 2018

EMCRs are invited to submit their proposals for activities to be delivered in the period July 2019 – July 2020. Activities must aim to provide tangible benefits to EMCRs to support their

careers and ultimately further scientific discovery. Funding of up to \$50 000 per activity.

More information on the Theo Murphy Initiative⁴⁰

*Japan Society for the Promotion of
Science Postdoctoral Fellowships 2019*

Applications close 21

November 2018

Fellowships are awarded for a period of 12 to 24 months for Australian researchers to work in institutes affiliated with JSPS, and conduct cooperative research with leading research groups in universities and other Japanese institutions.

More information on the Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowships⁴¹

*Regional Collaborations Programme
Application close 30 November 2018*

Funding for multi-partner projects and/or non-project aligned, multi-partner workshops under Round 2 of the programme.

More information on the Regional Collaborations Programme Round 2⁴²

External opportunities

Mahathir Science Award

Applications close 31 October 2018

Awarded to an individual or group in recognition of contributions and innovations towards solving problems in the tropics through

36 www.science.org.au/news-and-events/events/theo-murphy-initiative-australia/collaboration-across-boundaries-2018

37 www.science.org.au/news-and-events/events/public-speaker-series/science-us/when-life-ends

38 www.science.org.au/news-and-events/events/science-sport-women-and-field

39 www.science.org.au/news-and-events/events/theo-murphy-initiative-australia/cooling-sydney-hack

40 www.science.org.au/opportunities/conference-and-lecture-funding/theo-murphy-initiative-australia

41 newsletter.science.org.au/t/i-i-nsbud-l-u/

42 www.science.org.au/opportunities/travel/grants-and-exchange/regional-collaborations-programme

science, technology and innovation in tropical agriculture, tropical architecture and engineering, tropical medicine, and tropical natural resources—US\$100 000

More information on the Mahathir Science Award⁴³

Albert Einstein World Award of Science
Applications close 28
November 2018

This award recognises those who have accomplished scientific and technological achievements which have brought progress to science and benefit to mankind—US\$10 000

More information on the Albert Einstein World Award of Science⁴⁴

Dan David Foundation Award
Applications close 30
November 2018

Granted annually in the fields chosen for the three time dimensions—past, present and future. The prizes are granted to individuals or institutions with proven, exceptional, distinct excellence in the sciences, arts, humanities, public service, and business, that have made and continue to make an outstanding contribution to humanity on the basis of merit, without discrimination of gender, race, religion, nationality, or political affiliation—three prizes of US\$1 million each.

More information on the Dan David Award⁴⁵

Swiss Government Excellence Scholarships for Foreign Scholars for the 2019–2020 Academic Year
Applications close 30
November 2018

Scholarships promote international exchange and research cooperation between Switzerland and over 180 other countries, including Australia. Young researchers with a master's degree or PhD are eligible.

More information on the Excellence Scholarships for Foreign Scholars⁴⁶

IUHPST Essay Prize in History and Philosophy of Science
Applications close 15
December 2015

Seeks to encourage fresh methodological thinking on the history and philosophy of science as an integrated discipline. Entries in the form of an essay of 5000–10 000 words in English are invited, addressing this year's prize question: 'What is the value of history of science for philosophy of science?'

More information on the IUHPST Essay Prize⁴⁷

See more external awards and prizes⁴⁸

Fellows update— October 2018

October 29, 2018

Honours and awards to Fellows

Professor Noel Cressie

FAA—2018 Moyal Medal and Lecture, Macquarie University, for outstanding contributions to statistics, especially in statistics for spatial data and in environmental statistics.

Professor David Celermajer

FAA FAHMS—Elected a Fellow of the Australian Academy of Health and Medical Sciences

Professor Anne Kelso AO

FAA FAHMS—Elected a Fellow of the Australian Academy of Health and Medical Sciences

Professor John Miners FAA

FAHMS—Elected a Fellow of the Australian Academy of Health and Medical Sciences

Obituaries

Professor Emeritus Jacob Israelachvili **FAA FRS NAE NAS**
19 August 1944 to 20
September 2018

Professor Jacob Israelachvili was a prominent physicist, chemical engineer, material scientist and inventor of the Surforce measuring device. He was elected to the Academy in 1982 for his work developing original and path-breaking experimental techniques for measuring intermolecular forces. This work led to the discovery

43 www.msa-foundation.org/

44 www.consejoculturalmundial.org/news/2019-nominations/

45 www.dandavidprize.org/prize/prize-nominations

46 www.sbf.admin.ch/sbf/en/home/bildung/scholarships-and-grants/swiss-government-excellence-scholarships-for-foreign-scholars-an.html

47 iuhps.net/pages/inter-division-commissions/joint-commission/essay-prize.php

48 www.science.org.au/opportunities/recognition/external-sources-recognition

and elucidation of fundamental molecular interactions in complex colloidal and biological systems and at interfaces. This aided in the development of technological applications including the creation of biocompatible surfaces, development of new types of structured materials and soft biomaterials, and diagnosis of pathological membranes and tissues.

Professor Israelachvili, with his family, moved from Canberra to Santa Barbara in 1986, to take up an appointment as professor at the University of California (UCSB) in the Department of Chemical Engineering Material Science and BioMolecular Science and Engineering Programs, where he led the Interfacial Sciences Lab for more than 30 years. In 2017, he became a Professor Emeritus, and continued as a research professor at UCSB. Professor Israelachvili received the Academy's Pawsey Medal in 1977 and the Mathew Flinders Medal and Lecture in 1986. He was elected to the Royal Society in 1988, and was a Foreign

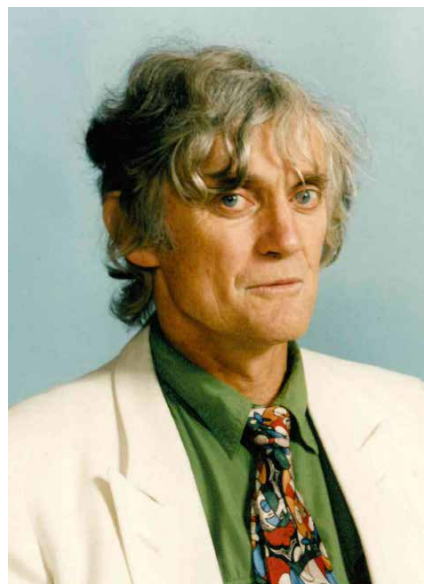


Professor Jacob Israelachvili

Associate of the National Academy of Sciences (USA) and then elected as a member in 2004. He received many prestigious international prizes, awards and accolades.

*Professor John Chappell FAA
24 April 1940 to 3 October 2018*

Professor John Chappell was a geoscientist, elected to the Academy in 1992 for his major contributions toward understanding late Quaternary sea level changes based on raised coral reefs in Papua New Guinea and elsewhere. John used stable isotopes and radiometric dating to establish links between sea level, global ice volume, and past climates, contributing substantially to the astronomical theory of ice ages. John also worked on the late Quaternary history of coasts, reefs, and estuarine lowlands, and on high resolution analysis of lowland environmental histories. He developed predictive models of the effects of future sea-level changes on these important environments and made major contributions to measuring and understanding erosion, soil production and



Professor John Chappell

landscape evolution as well as prehistoric interactions between climate, the biota and humans.

Professor Chappell worked at the Australian National University from 1967 and was appointed Head of the Department of Biogeography and Geomorphology at the Research School of Pacific Studies from 1990–2000. In 2001, he joined the Research School of Earth Sciences as Professor. After he retired in 2005, he retained the position of Emeritus Professor at the ANU while living in Dunedin, New Zealand.

John was a very active contributor to the Academy and generously gave his time to serve on numerous committees, including sectional committees, National Committees for Geography and for Quaternary Research (1993–2007); international exchange programs to Asia and Europe (1993–2000); and the Academy's International-biosphere Program in the early 1990s.

Welcome to our new Honorary Editor

Welcome to our new Honorary Editor for the newsletter, Professor Yuri Estrin. A world leader in materials science, Professor Estrin is Honorary Professorial Fellow at the Department of Materials Science and Engineering, Monash University, and Adjunct Professor at the School of Mechanical and Chemical Engineering, University of Western Australia.

Many thanks to our previous Honorary Editor Professor Hans Bachor, who is now the Academy's Secretary Education and Public Awareness.