APRIL 2021
NEWSLETTER
NUMBER 148

Australian Academy of Science

SCIENCE AT THE SHINE DOME 2021

Message from the Chief Executive—April 2021

April 29, 2021

I am thrilled to announce that Science at the Shine Dome, the Academy's annual signature event, is back in 2021! Traditionally held as a three-day annual event in May, this year we are delivering a series of online and hybrid events running from May to November. I warmly invite you to explore the rich and unique program and register for individual events or for a series pass. There is no other event where you can hear about cutting edge science from top scientists across a range of disciplines.

This month we had the rare opportunity of placing a time capsule under the copper roof of the Shine Dome for future generations to uncover. Included were reflections from our Fellows and early- and mid-career researchers on what they hope will have been the impact of their work by 2100 and what challenges they hope science will have overcome by then. In our note to the future, we asked that they be the judges of our actions and inactions and we offered a message of hope that the knowledge we have created today can assist future custodians of our planet.

I wish to warmly congratulate the 26 leading Australian early- and mid-career researchers who have been granted funding to connect and engage with other researchers in the Asia–Pacific region in response to the COVID-19 pandemic. The researchers will work in areas as diverse as mental health, artificial intelligence, telemedicine and data sharing. The Academy is proud to be managing the Regional Collaborations Programme COVID-19 Digital Grants on behalf of the Australian Government, and we look forward to seeing the outcomes of the research.

Finally, I would like to acknowledge two historic moments for the Academy.

We received with sadness the news this month that His Royal Highness Prince Philip, the Duke of Edinburgh had passed away. Prince Philip attended Government House when Her Majesty The Queen presented the Royal Charter to the founding Academy members in 1954, establishing the Australian Academy of Science.

Interestingly, our archives show that the initial idea had been to have Prince Philip, a keen supporter of science, present the Royal Charter. He suggested, however, that the situation was important enough for the Queen herself to do the honours. He said that a Royal Charter had not been presented in person by any monarch since King Charles II presented one to the Royal Society of London in 1662. It turns out that this wasn't quite correct—while King Charles signed the Royal Society's charter, he did not deliver it in person. That makes this Academy perhaps the only body in the Commonwealth to receive its Charter directly from the hands of the monarch.

I hope you enjoy reading this month's newsletter.

Anna-Maria

Science at the Shine Dome returns in hybrid event series

April 28, 2021

12 May – 4 November

Online, and in-person at the Shine Dome, Australian Academy of Science, Canberra

Registration is now open for **Science at the Shine Dome**[1], the Academy's premier annual event. Traditionally, Science at the Shine Dome is an annual three-day event in May where Australia's science community gathers to celebrate the best of science from around the country.

The Academy will deliver Science at the Shine Dome in a new format in 2021 to accommodate COVID-19 restrictions while engaging new audiences online. Science at the Shine Dome will include **online presentations by award recipients**[2], a **hybrid-style symposium**[3] exploring the theme Science and the Public Good, and a prestigious ceremonies celebrating the admission of the 2020 and 2021 new Fellows to the Academy.

Attendees are welcome to register for individual events, or purchase a season pass for all events.

Register for events or purchase a series pass[4]

Premier medal lecture series

Science at the Shine Dome will kick off with the inaugural Ruby Payne-Scott Lecture, delivered online by this year's medal recipient, Emeritus Professor Cheryl Praeger AC FAA.

Professor Praeger will speak about her career, the challenges she faced, and her personal connection to Ruby Payne-Scott.

> *"I felt I had this responsibility to maintain my research at the forefront in permutation groups and in understanding more about the finite simple groups. But I also felt a responsibility as professor to ensure that the teaching of mathematics remained at the cutting edge."*

Professor Praeger's lecture is the **first of several given by medal recipients**[5], which will occur throughout the year:

- May 12: 2021 Inaugural Ruby Payne-Scott Medallist Lecture—**Emeritus Professor Cheryl Praeger AC FAA**[6]
- July 28: 2021 Matthew Flinders Medallist Lecture—**Professor Andrew Holmes AC FAA FTSE FRS**[7]
- 3 November: 2020 Macfarlane Burnet Medallist Lecture (as part of the 2020 New Fellows presentations)—**Professor Marilyn Renfree AO FAA**[8].

Career award presentations

Each year, researchers receive highly sought-after honours for outstanding achievements in their scientific fields. Join the Academy for **two online events on September 7 and 14**[9] featuring 10-minute presentations by our 2020 and 2021 awardees, followed by live audience Q&As.

New Fellows

Fellows of the Australian Academy of Science are among the Nation's most distinguished

1 aas.eventsair.com/2021-science-at-the-shine-dome/
2 aas.eventsair.com/2021-science-at-the-shine-dome/awardee-events
3 aas.eventsair.com/2021-science-at-the-shine-dome/symposium
4 aas.eventsair.com/2021-science-at-the-shine-dome/registrations
5 aas.eventsair.com/2021-science-at-the-shine-dome/awardee-events
6 science.org.au/supporting-science/awards-and-opportunities/honorific-awardees/2021-awardees#scott
7 science.org.au/supporting-science/awards-and-opportunities/honorific-awardees/2021-awardees#flinders
8 science.org.au/supporting-science/awards-and-opportunities-2/honorific-awardees/2020-awardees#burnet
9 aas.eventsair.com/2021-science-at-the-shine-dome/awardee-events

scientists, elected by their peers for ground-breaking research and contributions that have had clear impact.

The **2020**[10] Fellows and yet-to-be-announced 2021 new Academy Fellows will be formally admitted to the Australian Academy of Science during **online events on November 2 and 3**[11]. Each new Fellow will present their work and achievements.

The new Fellows for 2021 will be announced in late May.

Symposium: Science and the Public Good

The annual symposium will **be held in August 2021**[12] as we explore the value of science to society. Speakers will help us to explore the critical importance of studying mathematics, chemistry, biology and physics, and how this fundamental knowledge is essential to scientific advances and our everyday lives.

Join us for Science and the Public Good via livestream. If you're from a school, university, organisation or government department, or are simply interested in science, you can watch this thought-provoking event live online and have the opportunity to ask questions of the speakers.

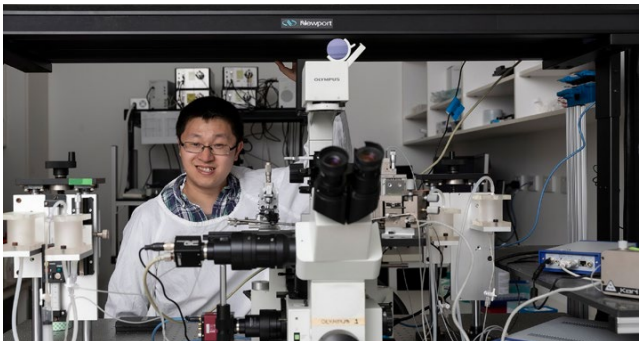
See the event program and register for the event[13]

Opportunities to partner

The Academy is delivering a dynamic new format in 2021 to accommodate COVID-19 restrictions while engaging new audiences online. Drawing on the Academy's Fellowship, 2.4 million social media followers along with its networks within the sector and mainstream media, exposure and reach associated with Science at the Shine Dome for event partners is anticipated to be greater than ever before. To find out how you can become an **Event Partner**[14], email **Academy Partnerships Manager Tracey Murray**[15] to reserve your place.

Regional research set to get digital boost

April 07, 2021



Dr Lining Arnold Ju, University of Sydney. Image: supplied.

The Australian Academy of Science along with the Department of Industry, Science, Energy and Resources (DISER), today congratulates the 26 recipients of the Regional Collaborations Programme COVID-19 Digital Grants.

Just over $250,000 in funding has been awarded to early-career and mid-career researchers to increase connectivity and engagement between Australian and Asia–Pacific economies in response to the COVID-19 pandemic.

Dr Jin Han. Photo: supplied.

Dr Jin Han, an early-career researcher from the Black Dog Institute, will use her $8,940 grant to deliver an online mental health course, aimed at helping international university students develop effective stress coping strategies and psychological resilience post COVID-19.

"International students are more prone to social isolation with less access to public resources due to potential financial, informational, language or cultural barriers," said Dr Han.

"This project will address an important gap in the current Asia–Pacific regional economics and public health."

10 science.org.au/fellowship/fellows/new-fellows/fellows-elected-2020
11 aas.eventsair.com/2021-science-at-the-shine-dome/new-fellow-events
12 aas.eventsair.com/2021-science-at-the-shine-dome/symposium
13 aas.eventsair.com/2021-science-at-the-shine-dome/
14 science.org.au/about-us/philanthropy-and-partnerships/partnerships/support-science-shine-dome
15 tracey.murray@science.org.au

Professor Tanja Junkers. Photo: supplied

Professor Tanja Junkers, a mid-career chemist from Monash is also a grant recipient. Her $9,000 grant will go towards building a machine-readable cloud database of chemical reactions that can be combined by different laboratories around the world.

"This project is a completely new way of collaboration and interaction in the chemical space, be it across laboratories in one country, or across borders in the Asia–Pacific region," said Professor Junkers.

This funding initiative, part of the **Australian Government's Global Innovation Strategy**[16] under the **National Innovation and Science Agenda**[17], supports projects that utilise digital methods of collaboration to address shared regional challenges related to the COVID-19 pandemic response and recovery.

The Regional Collaborations Programme (RCP) is managed by the Australian Academy of Science on behalf of the Department of Industry, Science, Energy and Resources.

The grant recipients are:

- **Dr Kiki Maulana Adhinugraha, La Trobe University**—How can digital innovation transform people's behaviour in response to the COVID-19 restrictions in Indonesia? ($9,980)
- **Dr Thushari Atapattu, University of Adelaide**—MindSpace: Mental wellbeing and emotion awareness tool ($10,000)
- **Dr Venkatakrishnan Balasubramanian, Federation University Australia**—AI-based alarm to predict the sudden deterioration of health in COVID-19 patients ($10,000)
- **Dr Siva Chandrasekaran, Swinburne University of Technology**—Classification of nCov using deep learning CNN models on lung x-ray images ($8,199)
- **Dr Narelle Cox, Monash University**—Easing health-service burden during COVID-19: Supporting implementation of remote rehabilitation in chronic lung disease ($9,998.65)
- **Dr Amirhossein Eslami Andargoli, Swinburne University of Technology**—COVID-19 and virtual Healthcare: The barriers, enablers and drivers in Australia vs Pakistan ($10,000)
- **Dr Kelley Graydon, University of Melbourne**—Audiology digital training modules for low resourced settings ($10,000)
- **Dr Jin Han, Black Dog Institute**—Online mental health education for international students ($8,940)
- **Dr Hassan Hosseinzadeh, University of Wollongong**—Patient experience with telemedicine: A risk reduction approach to COVID-19 management in Bangladesh ($9,990.90)
- **Dr Guangming Jiang, University of Wollongong**—Development of a machine learning platform to estimate COVID-19 community prevalence through wastewater-based epidemiology ($10,000)
- **Dr Lining Arnold Ju, University of Sydney**—Hemodynamic analysis for COVID-19-on-a-chip model of blood clotting with integrated computational fluid dynamics simulation and particle image velocimetry. ($10,000)
- **Professor Tanja Junkers, Monash University**—Cloud-based chemical synthesis: Breaking barriers and redefining international collaboration in the chemistry space ($9,000)
- **Dr Kishan Kariippanon, University of Wollongong**—Surabaya mental well-being check in (Surabaya tangguh: platform kualitas hidup penyintas COVID-19) ($9,970)
- **Dr Arutha Kulasinghe, Queensland University of Technology**—Understanding the immunopathology of COVID-19 infected myocardial tissue ($10,000)
- **Dr Christopher Lowbridge, Menzies School of Health Research**—Strengthening health

16 publications.industry.gov.au/publications/globalinnovationstrategy/index.html
17 industry.gov.au/strategies-for-the-future/boosting-innovation-and-science

systems capacity to respond to public health threats through digital education ($10,000)

- **Dr Iderlina Mateo-Babiano, University of Melbourne**—The Gender and Transport Assemblage of Learning and Knowledge (GTALK) ($9,976)
- **Dr Sajib Mistry, Curtin University**—Geo-spatial transfer learning data analytics to detect COVID-19 misinformation in the social media. ($10,000)
- **Dr Davoud Mougouei, University of Wollongong**—Reducing COVID-19 vaccine hesitancy by integrating public sentiments in vaccine communication: a machine learning framework ($9,998)
- **Dr Soon Hock Ng, Swinburne University of Technology**—Web platform for remote data analysis and processing of synchrotron data ($10,000)
- **Dr Siddhi Pittayachawan, RMIT**—Cloud-based disaster relief coordination and optimisation platform: a proof of concept for Vietnam and beyond ($10,000)
- **Dr Derrick Roberts, University of Sydney**—'Self-immolative' commodity plastics for single-use medical PPE ($9,245)
- **Dr Shazia Ruybal, Walter and Eliza Hall Institute of Medical Research**—Fit-for-purpose analytical tools to support COVID-19 sero-surveillance in Papua New Guinea ($10,000)
- **Dr Chin Wee Tan, Walter and Eliza Hall Institute of Medical Research**—Computational bioinformatics of COVID-19 digital spatial profiling in lungs ($10,000)
- **Dr Kamala Thriemer, Menzies School of Health Research**—Interactive digital capacity building for clinical trial staff and research institutions ($9,660)
- **Dr Johanna Wapling, Menzies School of Health Research**—Streamlining systems for remote support of SARS-CoV-2 testing at the National Health Laboratory of Timor-Leste ($8,870)
- **Dr Laurence Wilson, CSIRO Health and Biosecurity**—Developing a COVID-19 genetics platform for data-driven decision making ($10,000)

Other activities being undertaken with the Department of Industry, Science, Energy and Resources in response to COVID-19 include a project **examining the impact of the pandemic on women in STEM in the Asia-Pacific**[18] and a series of webinars **discussing how science, technology and innovation are assisting in the response to the pandemic**[19].

Background

The Regional Collaborations Programme COVID-19 Digital Grants aims to build strong regional linkages in the Asia–Pacific by funding multi-partner activities that facilitate greater collaboration in science, research and innovation and delivering innovative solutions to shared regional challenges.

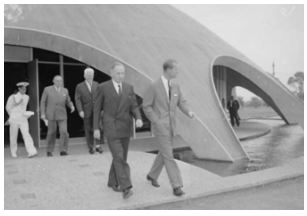
These activities will reduce collaboration barriers and promote an open approach to science, research and industry collaboration through Australian-led projects and multilateral fora.

This investment in collaborative engagement will help establish enduring and impactful networks.

Read more about the Regional Collaboration Programme COVID-19 Digital Grants.[20]

The passing of His Royal Highness, Prince Philip, the Duke of Edinburgh

April 09, 2021



Prince Philip attended the Shine Dome in 1962 to sign the Charter Book when he was made a Royal Fellow of the Australian Academy of Science.

The Australian Academy of Science pays tribute to His Royal Highness Prince Philip, the Duke of Edinburgh.

18 surveymonkey.com/r/WomenSTEM-Asia-Pacific
19 aas.eventsair.com/covid-19-webinar-series/
20 science.org.au/supporting-science/awards-and-opportunities/regional-collaborations-programme-covid-19-digital-grants

HRH Prince Philip attended Government House when Her Majesty The Queen presented the Royal Charter in 1954, establishing the Australian Academy of Science.

HRH Prince Philip was a keen supporter of science and attended the Shine Dome in 1962 to sign the Charter Book when he was made a Royal Fellow of the Australian Academy of Science.

The Academy offers its sincerest condolences to Her Majesty the Queen and other members of the royal family.

Climate adaptation summit outlines priorities for a national approach

April 29, 2021

Critical priorities

A summit featuring climate, industry, community and government leaders has outlined critical priorities for future frameworks and collaboration for Australia to adapt to climate change.

Future Earth Australia, hosted by the Australian Academy of Science, held the **Reimagining Climate Adaptation Summit**[21] from 19 to 21 April.

The summit attracted over 440 attendees and had 36 speakers and 4 keynotes. With speakers and attendees from all states and territories, and from across government, business, not-for-profits and community organisations, the event was able to gather diverse perspectives on adaptation as Australia mitigates its emissions.

The summit was underpinned by **a comprehensive national consultation**[22] and is the latest milestone in an ongoing dialogue led by Future Earth Australia and its members about Australia's climate adaptation agenda and action. Emerging from an increased national attention to community resilience and adaptation following the horrific 2019–20 bushfire season, the outcomes of the summit are particularly pertinent as the Australian Government refreshes its National Climate Resilience and Adaptation Strategy.

As well as defining priorities, the event acknowledged the pervasive nature of climate change effects on livelihoods, wellbeing, health, social life, economic and industry activities and our relationship with nature.

Climate adaptation manifests as a rich tapestry of priorities. While it might be adapting to the hotter, drier conditions which give rise to megafires, it also means having a plan to tackle intense heat waves, prolonged drought, coastal erosion, and floods. There are follow-on repercussions such as impacts on mental and physical health, damage and loss of property, significant changes to major industries like agriculture and tourism, and endangerment of culturally sacred and ecologically significant flora and fauna.

Diverse knowledge approaches to adaptation

Speakers on the first day of the summit, which centred on the importance of diverse knowledge approaches to adaptation, highlighted the need to create space and structure for First Peoples to define the conceptual basis for climate adaptation and define their priorities for how their knowledge is used.

"Aboriginal people have proven that cooperation can underpin human survival," said Bruce Pascoe, author of the book Dark Emu and Yuin, Bunurong and Tasmanian man. Traditional methods for managing for bushfires after the 2019–20 summer, for example, have garnered attention in the national discourse.

> *"Aboriginal people have proven that cooperation can underpin human survival."*

"Addressing climate change, building resilience and social equality is the growth story of the 21st century," said Dr Marcelo Mena, Chilean Minister for Environment 2014–18 and founder of the

21 futureearth.org.au/events/reimagining-climate-adaptation-summit
22 futureearth.org.au/initiatives/securing-australias-future

Coalition of Finance Ministers for Climate Action at the World Bank, in his keynote address on the second day.

The summit then defined key aspects of enabling practical adaptation through advancing frameworks which empower local communities to pursue their own vision and resilience in a warming world, collaboration across sectors and initiatives, and adapting business and finance to use a climate lens across their portfolios.

Zoe Whitton, Executive Director of Pollination Group, said that "investors are building the governance infrastructure themselves… at a point they need policy to enable the right decisions everyday across portfolios".

Thriving future

The third day of the summit focused on transforming sectors and systems like agriculture, coastal and marine systems, and cities and towns to prepare and adapt. Proper valuing natural and social capital associated with healthy ecosystems and resilient communities in our governance and business planning is as a major priority. Building the capacity of practitioners across sectors to work with uncertain and constantly changing conditions, which can be informed by quality research, is also a central step.

"In a time where so much is defined by urgency and emergency, we can't lose sight of the thriving future we are working for," said the Hon. Lily D'Ambrosio, Victorian Minister for Environment, Climate Change and Energy.

> *"In a time where so much is defined by urgency and emergency, we can't lose sight of the thriving future we are working for."*

Russ Wise, economist and adaptation specialist at CSIRO, emphasised that "our research, development, investment and strategies need to be based on an assessment of what we value, what we can't stand to lose, and being aware of who is defining those priorities."

Next step

The summit was recorded and will soon be made available on the **Future Earth Australia website**[23].

A written synthesis of themes arising from the discussions will also be published on the website.

It is envisaged that the next step will be a roadmap for enabling adaptation policy and practice across Australia, informed by extensive consultation with stakeholder groups already working in adaptation.

Future Earth Australia thanks all speakers, chairs and attendees for their invaluable contributions to advancing an inclusive, evidence-based and effective climate change adaptation agenda. Future Earth Australia was delighted to work with FEA members, the Sydney Environment Institute at the University of Sydney and the Institute for Culture and Society at Western Sydney University, to deliver this summit, and with 3M which sponsored the 'Emerging Leaders' forum for early career researchers and professionals.

Time capsule with Fellows' messages for the future placed under Dome

April 09, 2021

Watch the time capsule video online[24]

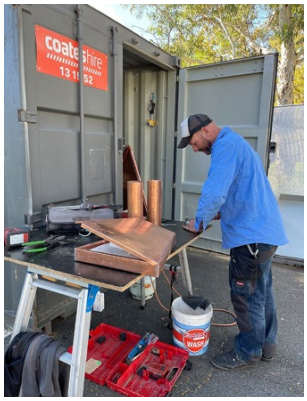
A time capsule containing Fellows' messages to the future has been placed under the copper roof of the Shine Dome.

The capsule contains a letter from the President of the Academy, Professor John Shine, reflections of Fellows and staff of the Academy, newspaper front pages documenting the tumultuous events of 2020 and other historical documents, including the complete genome of SARS-CoV-2.

23 futureearth.org.au/

24 science.org.au/news-and-events/news-and-media-releases/time-capsule-fellows-messages-future-placed-under-dome

The Shine Dome was **heavily damaged**[25] in January 2020 in a massive hailstorm. Restoration **began in November 2020**[26], with a new copper layer being laid over a timber frame, with waterproofing materials between. The original copper remains beneath these layers.



The time capsule was constructed from spare copper plates. Image: Australian Academy of Science.

The project is in the final stage of completion. Over 1888 tiles of copper, each custom made and weighing approximately 15.5 tonnes in total, have been installed on the Shine Dome.

Meanwhile, a project to envision **a zero emissions future for the Dome**[27] is underway, with several **public symposia being held**[28] that build a conversation around heritage values and sustainability.

The following letter and items were included in the time capsule.

Note from the President and Chief Executive, 7 April 2020

"2020 was a tumultuous year in Australia and around the globe. Australia had experienced bushfires of unprecedented intensity over the summer of 2019/2020 – a reminder of the impact on Australia of a warming globe due to anthropogenic climate change.

On 20 January 2020, Canberra was struck by a severe hailstorm that, in a matter of minutes, caused widespread damage. This included significant damage to the Australian Academy of Science's two buildings: Ian Potter House and the heritage listed Shine Dome.

Whilst this was unfolding a "pneumonia of unknown cause" was spreading across the globe. This was to become known as SARS-CoV-2, a highly transmittable respiratory virus that triggered a global health pandemic, COVID-19. By 7 April 2021, COVID-19 had caused 130 million recorded cases and 2.86 million recorded deaths worldwide.

Following the hailstorm, the repairs to the Academy's building included copper recladding of the Shine Dome. The original copper roof remained in place and a new structure was built over it to allow a new copper layer to be installed, improving the integrity and thermal performance of the building and rendering it waterproof. The apex of the Shine Dome was slightly elevated to assist water run-off and avoid water pooling at the top. In doing so, a cavity was created beneath the apex.

This time capsule was inserted into the cavity on Wednesday 7 April 2021. It contains the documents and historical materials listed below. They are but a small sample of the history of the Academy, of its building and of the extraordinary knowledge created and disseminated by its Fellowship. The time capsule seeks to capture the significant and tumultuous events of 2020, many of which shaped the way we live in Australia and across the world.

Professor David Curtis AC FAA FRS was a former President of the Academy. In an interview by Dr Max Blythe in 1993, Blythe asked Curtis "… your Presidency of the Academy of Science from 1986 to '90. That must have been an interesting and fruitful time?"

Curtis replied "It was an interesting time. I can't really judge how fruitful it was – you can't do that yourself. You need to look back at it from the future and see what it looks like."

Should you discover this time capsule, we ask that you look back from the future in order to assess our actions and inactions and to inform your way forward as custodians of our planet and all its biodiversity."

25 science.org.au/news-and-events/news-and-media-releases/canberras-iconic-landmark-damaged-hailstorms
26 science.org.au/news-and-events/news-and-media-releases/australias-home-science-shine-brighter-ever
27 science.org.au/news-and-events/news-and-media-releases/towards-net-zero-emissions-australias-home-science
28 science.org.au/news-and-events/events/sustainable-shine-dome-planning-sustainable-futures-heritage

Time capsule contents

Some of the items placed in the time capsule. Clockwise from top-left: 65 years of the Australian Academy of Science commemorative list of Fellows; "The Australian Academy of Science: The First 50 Years" by Frank Fenner; "Profiles of Women Scientists in Asia: Their inspirational stories" by The Association of Academies and Societies of Science in Asia; Shine Dome restoration design plans; Australian Academy of Science lapel pin; Science Matters magazine 2020; The risks to Australia of a 3°C warmer world;"A big, bold, simple concept: a history of the Australian Academy of Science Dome" by Alan Roberts; Women in STEM Decadal Plan. Image: Australian Academy of Science.

Books and reports

- Roberts, Alan. & Australian Academy of Science (2010). A big, bold, simple concept: a history of the Australian Academy of Science Dome.
- The Association of Academies and Societies of Science in Asia (2018). Profiles of Women Scientists in Asia: Their inspirational stories.
- Australian Academy of Science (2021). The risks to Australia of a 3°C warmer world.
- Australian Academy of Science (2020). Science Matters
- Australian Academy of Science (2019). Women in STEM Decadal Plan
- Frank Fenner 2008). The Australian Academy of Science: The First 50 Years

Newspaper covers

- Front page, Canberra Times, 1st January 2020
- Front page, Canberra Times, 21st January 2020
- Front page, Canberra Times, 29th January 2020
- Front page, Canberra Times, 2nd February 2020
- Front page, Canberra Times, 3rd March 2020
- Front page, Canberra Times, 13th March 2020
- Front page, Canberra Times, 22nd March 2020
- Front page, Canberra Times, 8th July 2020
- Front page, Canberra Times, 27th October 2020
- Front page, Canberra Times, 15th November 2020

One of the front pages preserved in the time capsule. Image: The Canberra Times

Other documents

- Shine Dome restoration design plans
- Australian Academy of Science By-Laws, December 2020
- Reflections from Fellows of the Australian Academy of Science and early- and mid-career researchers
- 65 years of the Australian Academy of Science commemorative list of Fellows [poster]
- Images from staff of hail damage to Australian Academy of Science grounds and property and selection of events over the course of 2020
- First Rapid Research Information Forum report: **Re-infection with SARS-CoV-2**[29], Office of the Chief Scientist, 19 April 2020
- SARS-CoV-2 genome sequence:
  - GenBank accession number **MN908947**[30]/ NCBI Sequence Read Archive Bioproject accession number **PRJNA603194**[31] from Wu, F., Zhao, S., Yu, B. et al. A new coronavirus associated with human respiratory disease in China. Nature 579, 265–269 (2020). **https://doi.org/10.1038/s41586-020-2008-3**

29 science.org.au/covid19/re-infection-sars-cov-2
30 ncbi.nlm.nih.gov/gquery/?term=MN908947
31 ncbi.nlm.nih.gov/bioproject/?term=PRJNA603194

Objects

- Australian Academy of Science lapel pin received by every Fellow elected to the Australian Academy of Science

Opportunities for scientists—April 2021

April 29, 2021

Academy opportunities

Academy awards and funding opportunities

Nominations are open for the Academy's 2022 honorific awards, and applications are open for support for research conferences, research awards and travelling fellowships.

All honorific award nominations close 1 May 2021

All research conferences, research awards and travelling fellowships applications close 1 June 2021

More information on nominations for awards and applications for funding opportunities[32]

External opportunities

Australian Museum Eureka Prizes

The Australian Museum Eureka Prizes honour excellence across the areas of research & innovation, leadership, science engagement, and school science.

Applications close 28 May 2021

More information about the Australian Museum Eureka Prizes[33]

Premi Ramon Margalef d'Ecologia

The purpose of this international award is to recognise people all over the world who have distinguished themselves in the field of ecological science.

Applications close 28 May 2021

More information about the Premi Ramon Margalef d'Ecologia[34]

L'Oréal-UNESCO For Women in Science Awards

Recognises and promotes established women scientists whose outstanding achievements have contributed to the advancement of scientific knowledge and of its benefits to society and provide support to promising young women who are already making significant contributions in their scientific disciplines.

Applications close 31 May 2021

More information about the L'Oréal-UNESCO For Women in Science Awards[35]

Prince Mahidol Award

Awarded to individual(s) or institution(s) for their outstanding performance and/or research in medicine that contributes directly to the betterment of society. There is one award in medicine and one in public health—US $100,000.

Applications close 31 May 2021

More information about the Prince Mahidol Award[36]

Order of Australia Honours

Nominations received from the public to recognise people who have contributed above and beyond to the Australian community or humanity at large. To encourage diverse representation of the community, nominations of women are being sought.

Rolling deadline—appointments in the Order of Australia are announced on Australia Day in January and on the Queen's Birthday public holiday in June.

More information on the Order of Australia Honours[37]

See more external awards and prizes[38]

32 science.org.au/news-and-events/news-and-media-releases/nominate-now-academys-2022-awards
33 australian.museum/get-involved/eureka-prizes/
34 presidencia.gencat.cat/en/ambits_d_actuacio/premis/premi-ramon-margalef-decologia/
35 forwomeninscience.com.au/
36 princemahidolaward.org/nomination-procedures/
37 gg.gov.au/australian-honours-and-awards/order-australia
38 science.org.au/supporting-science/recognition/external-sources-recognition

Fellows update—April 2021

April 29, 2021

Honours and awards to Fellows

Dr Liz Dennis AC FAA FTSE—elected an International Member of the National Academy of Sciences

Professor Lisa Kewley FAA— elected an International Member of the National Academy of Sciences

Professor Suzanne O'Reilly AM FAA—a new rare mineral, oreillyite (Cr_2N), has been named in her honour by the International Mineralogical Association.

Obituary

Professor Jeremy Pickett-Heaps FAA FRS

5 June 1940 to 11 April 2021

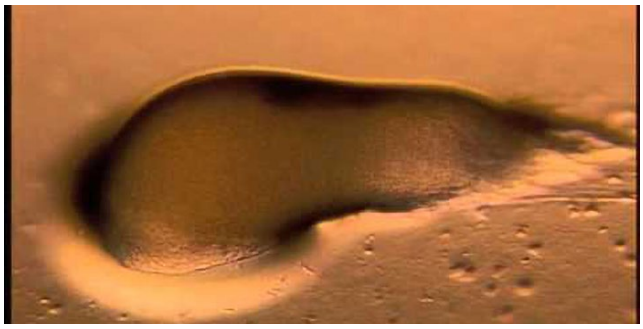
Professor Jeremy Pickett-Heaps

Professor Jeremy Pickett-Heaps was born in India to Australian parents and educated at Geelong Grammar. He obtained a Bachelor of Arts in natural sciences/biochemistry in 1962 and a PhD in biochemistry in 1965 from Cambridge University. Professor Pickett-Heaps joined the then John Curtin School of Medicine at the Australian National University and then transferred to the newly established Research School of Biological Sciences. In 1970, he was appointed Professor of Molecular, Cellular and Developmental Biology at the University of Colorado. Professor Pickett-Heaps returned to Australia in 1988 as Professor of Botany at the University of Melbourne, where he remained until his retirement in 2002.

Professor Pickett-Heaps was elected to the Academy in 1992 and to the Royal Society in 1995 for his contributions to cell biology. He pioneered the use of autoradiography at the electron microscope level and was the first to demonstrate the role of the Golgi apparatus in processing and delivering polysaccharides. In the process he discovered, documented and named the 'Pre-prophase Band' of microtubules, with its still-mysterious property of predicting the site and plane of division in plant cells, a crucial aspect of plant development. Professor Pickett-Heaps originated the seminal concept of the microtubule organising centre, thus founding a major field of research. His work led to a novel view of evolutionary relationships in the algae and the origin of higher plants. He made many important contributions to knowledge of microtubule formation, dynamics and interactions with chromosomes in the mitotic spindle during cell division, from which new hypotheses on the mechanism of mitosis have been generated. In recognition of his work, several of this colleagues and friends named a most unusual green alga after him, *Microrhizoidea pickettheapsiorum*.

Professor Pickett-Heaps was particularly interested in video microscopy, and established a laboratory devoted to filming cells and microorganisms. With his wife, Julianne, he founded 'Cytographics' and produced a range of exceptional teaching and research videos that have thrilled and inspired generations of undergraduate and postgraduate students, as well as microscopists and naturalists the world over. Some of his videos can be seen on his **YouTube channel**[39].

Professor Pickett-Heaps served on several Academy committees.



This video[40], made and narrated by Professor Pickett-Heaps, is a fascinating glimpse into the lives of Dictyostelium—a cellular slime mold. It has received more than 162,000 views on YouTube.

39 youtube.com/channel/UCH6cxhgl-S0Lk1nnaX8cMGA/featured
40 youtu.be/5h8WOWEqP6o

More news

Support Science at the Shine Dome

The Academy is delivering a dynamic new format in 2021 to accommodate COVID-19 restrictions while engaging new audiences online. Drawing on the Academy's Fellowship, 2.4 million social media followers along with its networks within the sector and mainstream media, exposure and reach associated with Science at the Shine Dome for **event partners**[41] is anticipated to be greater than ever before. To find out how you can become an Event Partner, email **Academy Partnerships Manager Tracey Murray**[42] to reserve your place.

In brief

Our Canberra Speaker Series returned to the Shine Dome in April exploring the topic of GM foods. With a combined online and in-person audience of close to 300, two leading experts on the science and the ethics of genetic modification, Academy Fellow Professor Surinder Singh and Professor Rachel Ankeny, discussed the cutting-edge GM research currently happening in Australia and perspectives on ethics and safety. **Watch the recording of GM foods.**[43]

With its **new copper roof**[44], the Academy's famous Shine Dome has reopened as a venue and is ready to take bookings. The dome has been a much-loved feature of the Canberra landscape since its award-winning construction in 1959, and was National Heritage listed 2005. Its modernist fittings and furnishings are timeless and elegant, and its spaces airy and retro-futuristic. Located next to the highly acclaimed New Acton Precinct, the dome is a short walk from hotels and the Australian National University, and within comfortable walking distance of tourist attractions, cafes, parking and city shops. **Find out more about the Shine Dome as a venue**[45].

The Academy, the EMCR Forum and five National Committees for Science made submissions to the University Research Commercialisation Scheme consultation. **Read the submissions.**[46]

Other recent submissions to government include:

- **Joint submission—National Gene Technology Scheme, Consultation Regulation Impact Statement**[47]
- **Submission—Data Availability and Transparency Bill 2020**[48]
- **Joint Submission—Consultation on Mitochondrial Donation in Australia**[49]
- **Submission—Developing Australia's Space Industry**[50]
- **2021-22 Pre-Budget Submission**[51]

The Academy delivered the fourth in a series of webinars on COVID-19. The latest webinar focused on how indigenous populations around the world have been impacted by the virus. Speakers from Australia, Mexico and Canada explored existing determinants of health for indigenous peoples, limited access to vaccines and health services due to location, and many other issues specific to indigenous populations. The webinar series was delivered in collaboration with the Department of Industry, Science, Energy and Resources. **Watch the webinar series.**[52]

41 science.org.au/about-us/philanthropy-and-partnerships/partnerships/support-science-shine-dome
42 tracey.murray@science.org.au
43 science.org.au/news-and-events/events/food-thought-gm-foods
44 science.org.au/news-and-events/news-and-media-releases/time-capsule-fellows-messages-future-placed-under-dome
45 shinedome.org.au/
46 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/submission-university-research-commercialisation-scheme
47 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/joint-submission-national-gene-tech-regulation-impact-statement
48 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/submission-data-availability-transparency-bill
49 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/joint-submission-consultation-mitochondrial-donation
50 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/submission-developing-australias-space-industry
51 science.org.au/supporting-science/science-policy-and-analysis/submissions-government/2021-22-pre-budget-submission
52 science.org.au/node/17289

Coming events

What if scientists ruled the world?

Join a unique interactive theatre performance to experience an intriguing alternate world where science just might save humanity, or destroy it, depending on how it is used. The performance will follow a Forum Theatre format, where the audience's words shape what will happen on stage.

Saturday 8 May—**Register for this event**[53]

Science at the Shine Dome—inaugural Ruby Payne-Scott Lecture

The first in Science at the Shine Dome series of events this year is the inaugural Ruby Payne-Scott Lecture to be delivered online by Emeritus Professor Cheryl Praeger AC FAA from the University of Western Australia

Wednesday 12 May 2021—**Register for this event**[54]

Food for thought

Tuesday 8 June—**Gut Health**[55]

Tuesday 10 August—**Alternative Food Sources**[56]

Tuesday 12 October—**Food Security**[57]

Tuesday 14 December—**The Future of Food and Nutrition**[58]

53 science.org.au/node/17401
54 aas.eventsair.com/2021-science-at-the-shine-dome/awardee-events
55 science.org.au/news-and-events/events/food-thought-gut-health
56 science.org.au/news-and-events/events/food-thought-alternative-food-sources
57 science.org.au/news-and-events/events/food-thought-food-security
58 science.org.au/news-and-events/events/food-thought-future-food-and-nutrition