



Her Majesty The Queen with Academy Fellow Leonard Huxley KBE FAA at the opening of the Menzies Library, Canberra, on 13 March 1963 (see story page 2).

Message from the Chief Executive— September 2022

September 30, 2022



Anna-Maria Arabia

Welcome to the September Newsletter.

This month has been defined by a monumental event – the passing of Her Majesty Queen Elizabeth II. The Academy has

a long and unique history with the Queen – she presented our Royal Charter to Sir Mark Oliphant, the first President of the Academy, on 16 February 1954 in Canberra, thereby founding the Australian

Academy of Science. That Royal Charter still guides our work and operations today.

Early in September the Academy was proud to publish Future Earth Australia’s National Strategy for Just Adaptation, a climate vision for a sustainable and equitable Australia. We have the opportunity to use this period of immense change to disrupt current adaptation thinking and foster recognition, inclusion and capacity building for all Peoples and nature. This much-anticipated strategy was launched at Parliament House by the Assistant Minister for Climate Change and Energy, Senator the Hon Jenny McAllister. I strongly commend the report to you and thank all involved in its development.

The results of the latest STEM Equity Monitor were released, reinforcing the need for stronger sector and industry action and evaluation when

it comes to addressing the structural barriers preventing gender equity and greater diversity in STEM. As authors of the Women in STEM Decadal Plan we know if you can't measure it, you can't improve it, so data such as that captured by the STEM Equity Monitor are critical to guide our actions and to make sustained change.

Since the Academy was formed, Fellows have provided expert advice so science can inform decision making across our nation. This month the Academy has been recognised as the independent scientific adviser to the 2022 Inquiry into the convictions of Kathleen Folbigg. Our representation will assist in the selection of the most qualified scientific experts and the formulation of lines of inquiry so the most relevant and up to date scientific information informs the justice system.

You may also be interested in reading about our roundtable of technology and science experts who engaged in a productive discussion on novel ways to remove greenhouse gases from our atmosphere to limit warming to less than 1.5 degrees. Participants agreed that reducing greenhouse emissions as much and as fast as possible is the highest priority to limit global warming, and that we need rapid and large-scale removal and long-term storage to work in parallel.

We offer our warmest congratulations to the winners of the prestigious 2022 Eureka Prizes, including Academy Fellows Professor Veena Sahajwalla and Professor David Lindenmayer.

Finally, we are so excited that the Academy's annual flagship event, Science at the Shine Dome, is back in 2022 as a face-to-face event at the Shine Dome in Canberra between 22 and 24 November. This year we will be admitting Fellows elected in 2020, 2021 and 2022 who will share with us their scientific discoveries. You can read more about the event and register to attend [here](#)¹.

Enjoy the September newsletter.

Anna-Maria Arabia

The passing of Her Majesty Queen Elizabeth II

September 09, 2022

The Australian Academy of Science pays tribute to Her Majesty Queen Elizabeth II.

Throughout her reign, Her Majesty The Queen showed a great appreciation for **the transformative power of science and technology**², and **travelled more widely than any other monarch**³.

After taking the throne in February 1952, Elizabeth II was the first reigning monarch of Australia to set foot on Australian soil, arriving on 3 February 1954 with her husband HRH Prince Philip, the Duke of Edinburgh.

One month before, Her Majesty affixed her official seal to **the founding document of the Australian Academy of Science, the Royal Charter**⁴, after Fellows of the Royal Society of London, Sir Mark Oliphant and Dr David Martyn, led a petition to establish a Learned Academy in Australia.

Prince Philip – who had recently become a Royal Fellow of the Royal Society of London and was a keen supporter of science – was asked to present the Australian Academy of Science's new Royal Charter to the petitioners, but he suggested the occasion was important enough for Her Majesty to present the Charter.



The signatures of Her Majesty the Queen and HRH The Duke of Edinburgh in the Academy's Charter Book.

1 <https://aas.eventsair.com/2022-science-at-the-shine-dome>

2 <https://blog.sciencemuseum.org.uk/celebrating-queen-elizabeth-ii-platinum-jubilee/>

3 <https://www.royal.uk/queen-elizabeth>

4 <https://www.science.org.au/academy-newsletter/march-2019-125/archives-academy-founding-document>

On 16 February 1954, the ten members of the provisional Council of the Academy went to Government House and the Queen handed Oliphant, as President, the Royal Charter of the Academy – founding the Australian Academy of Science.

At the **opening of the Shine Dome**⁵, five years later, His Excellency Field Marshall Sir William Slim, Governor General of Australia, read the following message from Her Majesty The Queen:

“Please convey my good wishes to all assembled at the opening of the Australian Academy of Science Building on Wednesday. I am confident that the Academy, to which I presented its Charter five years ago, will play a significant part in the acquisition of scientific knowledge and in applying it to the progress and welfare of my subjects in the Commonwealth of Australia.”

Her Majesty Queen Elizabeth II is succeeded by her son, King Charles III.

The Australian Academy of Science offers its sincerest condolences to the Royal Family. May she rest in peace.

Information and images for this story were sourced

from the Academy’s **Basser Library and Fenner Archives**⁶, which hold a rich historical collection documenting the history of science in Australia. The archives are open to the public by appointment.

A new climate vision for a sustainable and equitable Australia

September 06, 2022



Australia must address social injustices and support communities experiencing multiple and intersecting vulnerabilities as we adapt to a changing climate, argues a **new report from Future Earth Australia**⁷.

A National Strategy for Just Adaptation, **to be launched tonight (6 September) at Parliament House**⁸, aims to broaden and reimagine the way adaptation policy, planning and action are framed in Australia.

It will be launched by the Assistant Minister for Climate Change and Energy, Senator the Hon Jenny McAllister.

The strategy, developed over two years by an **Expert Working Group**⁹ of 35 authors from 13 university, government and private partners, highlights how everyday social inequities, uneven capacities and unequal representation undermine how well people can adapt to climate change.

Bhiamie Williamson from the Australian National University, a Euahlayi man from north-west New South Wales and Co-chair of the Expert Working Group that developed the strategy, said a central component in this new approach was recognising and including the voices, experiences and ambitions of the many people who make up Australia today – especially Indigenous Peoples.

5 <https://www.science.org.au/about-us/shine-dome/history/opening-ceremony>

6 <https://www.science.org.au/about-us/academy/buildings/basser-library-and-fenner-archives>

7 <https://www.futureearth.org.au/publications/national-strategy-just-adaptation-0>

8 <https://www.science.org.au/news-and-events/events/launch-national-strategy-just-adaptation>

9 <https://www.futureearth.org.au/initiatives/securing-australias-future/expert-working-group>

“Recent disasters, like the flooding crisis on the east coast, have shown how entrenched inequalities multiply the risks that communities face in times of crisis,” Mr Williamson said.

“Ignoring the diversity of our country’s residents, including their needs, aspirations and capabilities, weakens Australia’s collective ability to adapt.”

Dr Petra Lundgren, Director of Future Earth Australia, said the new strategy provides a counter-narrative to previously developed adaptation strategies.

“It moves from focusing on largely technical elements to encompassing social, political and behavioural strategies and systems change,” Dr Lundgren said.

The strategy forms the backbone of Future Earth Australia’s **Reimagining Climate Change Adaptation initiative**¹⁰ that began with a state-by-state consultation in October 2020, followed by the Reimagining Climate Adaptation Summit in April 2021.

It sets out the following five practical directions for achieving transformational change in Australia’s climate adaptation planning and practice:

- Empowering Indigenous leadership
- Embedding a just adaptation framework across governments and sectors
- Including the voices and experiences of diverse stakeholders across areas of marginalisation into just adaptation processes
- Supporting communities and community groups to drive transformation
- Advancing research agendas that promote just adaptation

Professor Petra Tschakert from Curtin University, Co-chair of the Expert Working Group, said the strategy looks at adaptation as not merely an adjustment to climatic hazards and climate-related policies, but also as an urgent effort to address and overcome inequities that are all too often couched in the seemingly benevolent language of ‘vulnerable people’.

“It is precisely this labelling of ‘the vulnerable’ that obscures the structural inequities that produce vulnerabilities and maintains the uneven distribution of adaptive capacities in society. We need to move beyond this,” Professor Tschakert said.

Read the full report¹¹.

About Future Earth Australia

Based at the Australian Academy of Science, Future Earth Australia is a peak initiative that convenes leaders across expertise, sectors and the nation to advance the sustainability agenda and forge pathways to a thriving future.

Future Earth Australia has previously produced national strategies on **sustainable oceans and coasts**¹² and **sustainable cities and regions**¹³.

Future Earth Australia’s vision sees Australia and its people thriving in, and contributing to, a sustainable and equitable world. It brings together influential voices to deliver leading research and programs on Australia’s most pressing sustainability challenges, and connects to unique global networks to leverage international expertise.

Learn more about Future Earth Australia¹⁴.

¹⁰ <https://www.futureearth.org.au/initiatives/securing-australias-future>

¹¹ <https://www.futureearth.org.au/publications/national-strategy-just-adaptation-0>

¹² <https://www.futureearth.org.au/publications/sustainable-oceans-and-coasts-strategy>

¹³ <https://www.futureearth.org.au/publications/sustainable-cities-strategy>

¹⁴ <https://www.futureearth.org.au/>

Academy confirmed as independent scientific adviser at Folbigg inquiry

September 06, 2022



Kathleen Folbigg appears via video link during a convictions inquiry at the NSW coroners court in 2019. Photograph: Joel Carrett for AAP.

The Australian Academy of Science has been granted leave to appear and be represented by legal counsel at the Second Inquiry into the convictions of Ms Kathleen Folbigg.

The Academy's role in the Inquiry extends to making submissions addressing:

1. suitable experts in areas of specialised scientific knowledge for the purpose of obtaining relevant evidence;
2. suitable questions/clarifications for experts who are engaged by the Inquiry;
3. scientifically technical aspects of the inquiry: in particular how that science should be approached consistent with appropriate scientific standards and scientific rigour.

The grant of leave does not extend to the examination or cross-examination of witnesses but does not preclude the Academy from making an application to examine or cross-examine any particular witness.

Australian Academy of Science President, Professor Chennupati Jagadish, said the Academy was pleased to be able to provide scientific rigour at the inquiry, as an independent scientific adviser.

"This will ensure the commissioner and senior counsel can hear from the most qualified experts relevant to this case," Professor Jagadish said.

"Our assistance to the Inquiry is designed to ensure that Commissioner Bathurst is able to call on the best available contemporary science to support the Second Inquiry into the convictions of Ms Kathleen Folbigg."

Orders made by the Commissioner are published on **the website of the Department of Communities and Justice**¹⁵.



Watch on **Vimeo**¹⁶

Academy welcomes STEM Equity Monitor report

September 23, 2022



Dr Pauline Treble (left) and Dr Carol Tadros in Jenolan Caves collecting water samples (Image: ANSTO). From the Women in STEM Decadal Plan.

The Australian Academy of Science says the results of the latest **STEM Equity Monitor**¹⁷ reinforce the need for stronger action to remove

¹⁵ <https://2022folbigginquiry.dcj.nsw.gov.au/>

¹⁶ <https://vimeo.com/448789935>

¹⁷ <https://www.industry.gov.au/publications/stem-equity-monitor>

barriers preventing gender equity and greater diversity in STEM.

Academy President Professor Chennupati Jagadish welcomed the report and said it highlighted the importance of robust and ongoing data collection and evaluation to inform decision-making.

“The report shows a modest increase in women’s workforce participation and enrolments in university STEM courses, which is great to see,” Professor Jagadish said.

“However, it’s concerning to see that girls’ confidence in all STEM subjects falls as they get older and that girls are more likely than boys to list lack of interest as a barrier to studying STEM.

“We must do more to create a more accountable STEM ecosystem that enables the attraction, retention and progression of diverse communities in STEM.

“If we wish to see greater diversity at senior levels in STEM professions, we must take actions that are evidence informed. The STEM Equity monitor is a valuable tool to guide decision-making and to drive investment into measures that work.

“As the **Academy’s ten-year Plan for Women in STEM**¹⁸ made clear, if you can’t measure it, you can’t improve it.

“The Women in STEM Decadal Plan shows that evaluating programs and activities is critically important so proven measures can be taken to achieve equity in STEM,” Professor Jagadish said.

“The STEM Equity monitor is a valuable tool to guide decision-making and to drive investment into measures that work.”

“To break down persistent barriers faced by under-represented communities, the STEM ecosystem – government, academia, educators and industry – needs to push in the same direction and harness the opportunities in the Women in STEM Decadal Plan so as to reach gender equity by 2030.

“The Academy’s **Women in STEM Decadal Plan Champions**¹⁹ are an excellent example of the impact of collective action from industry

and leading practice employers who are committed to addressing gender equity within the decade,” he said.

The Academy applauds the development of an evidence-based evaluation framework by the Women in STEM Ambassador Professor Lisa Harvey-Smith, and improved data collection, monitoring and reporting by the Australian Government.

Academy’s tweet: ‘We welcome the timely review announced today by Minister Ed Husic. It’s critical that we take an evidence-informed approach when investing precious resources into initiatives designed to remove barriers faced by under-represented groups in #STEM.’ Made in response to Australian Financial Review article ‘Husic orders review of women in STEM’ on 6 September 2022

Earlier this month, the Academy **welcomed the announcement**²⁰ by Industry and Science Minister Ed Husic to review how existing government programs can be reformed to support greater diversity in Australia’s science and technology sectors.



“Demand for STEM skills will continue to grow, so Australia can ill afford to under-utilise all of the nation’s available talent.

18 <https://www.science.org.au/support/analysis/decadal-plans-science/women-in-stem-decadal-plan>

19 <https://www.stemwomen.org.au/champions>

20 https://twitter.com/Science_Academy/status/1566960731048022016

“We welcome a widening of the national discourse to boost participation of other under-represented groups including gender diverse people, First Nations people, culturally and ethnically diverse, mature workers, LGBTQIA+, and those living with disability, amongst others,” Professor Jagadish said.

In 2022, the Academy achieved 50/50 between men and women **in the annual election of new Fellows**²¹. The Academy is taking an evidence-based approach to better understand and remove barriers experienced by under-represented groups and to support emerging STEM professionals.

New areas of research must be explored to achieve negative emissions

September 21, 2022



A complex of greenhouses in Hinwell, Switzerland that uses the captured CO₂ from a nearby incineration plant for the production of tomatoes, zucchini, cucumbers and eggplants. Image: Matjaz Krivic for Climate Visuals Countdown.

Australia’s research expertise, wealth of critical minerals and renewable energy potential could make it an international leader in removing carbon dioxide from the atmosphere, according to leading experts.

The country’s unique strengths and comparative advantages were part of a discussion on novel negative emissions approaches at a national roundtable hosted by the Australian Academy of Science in September.

The event was chaired by Academy President, Professor Chennupati Jagadish AC PresAA FTSE, with participants including experts in greenhouse gas (GHG) removal, storage and use, climate and environmental science, climate policy, and governance and innovation policy.



The participants of the roundtable held via videoconference. See the statement below for a full list of participants.

Questions the roundtable sought to discuss included:

- How do we develop the capacity to drawdown GHGs at a globally effective scale while reducing emissions to close to zero?
- Do we have the knowledge and science capability?

The participants agreed that of the present methods used for removal of GHGs (primarily CO₂) and its long-term storage or utilisation, none are at the scale required. They concluded that reducing GHG emissions as much and as fast as possible is the highest priority to limit global warming. In parallel, we need rapid and large-scale removal of GHGs from the atmosphere, combined with long-term storage.

The roundtable identified opportunities for Australia including the importance of creating an innovation and regulatory environment to accelerate the development of novel approaches, and investing in human capital, especially young researchers, to develop negative emissions research capability.

Participants identified a range of novel approaches across capture, storage, utilisation

21 <https://www.science.org.au/news-and-events/news-and-media-releases/two-firsts-academy-announces-2022-fellows>

and monitoring. These are new areas of research that could prove fruitful but are currently not a core part of the negative emissions discussion. Participants highlighted that a wide range of options should be explored as part of a portfolio of solutions to achieve greenhouse gas removal. Some of these novel approaches will be discussed in the full report on the outcomes of the roundtable to be released later this year.

The report will offer guidance to the Australian research community, private sector, and governments on opportunities for development of negative emissions approaches in Australia.

[Read the full statement from the roundtable](#)²².

Eureka moment for two Academy Fellows

September 12, 2022



Australian Museum Eureka Prizes trophy. Image: Daniel O'Doherty for the Australian Museum.

Two Academy Fellows, Professor Veena Sahajwalla and Professor David Lindenmayer, are among Australia's top scientists and science teams recognised at the prestigious 2022 Eureka Prizes at the Australian Museum.

Closing the loop on waste



[Watch on YouTube](#)²³

An internationally recognised materials scientist, engineer and innovator, **Professor Sahajwalla**²⁴ is renowned for pioneering high temperature transformation of waste in the production of a new generation of 'green materials'.

Her work aims to shift Australia's mindset to see unwanted products and materials not as waste, but as a valuable resource, reusing and recycling them into new products and **creating a 'circular economy'**²⁵.

She received the Celestino Eureka Prize for Promoting Understanding of Science.

Real-time biodiversity



[Watch on YouTube](#)²⁶

One of Australia's leading ecologists, **Professor Lindenmayer**²⁷ has long been known for his original and ambitious approaches to large ecological questions.

²² <https://www.science.org.au/supporting-science/science-policy-and-analysis/projects/statement-roundtable-novel-negative-emissions-approaches-australia>

²³ https://youtu.be/EUIv_tBz-IM

²⁴ <https://www.science.org.au/profile/veena-sahajwalla>

²⁵ <https://www.science.org.au/curious/policy-features/when-going-around-circles-way-forward>

²⁶ <https://youtu.be/1HIRY6D7OC0>

²⁷ <https://www.science.org.au/profile/david-lindenmayer>

His work with **Sustainable Farms**²⁸, which monitored how biodiversity responds to management changes on farms over several decades, has allowed farmers to make informed management decisions – including using BirdCast, a digital tool that helps predict which birds may live in woodlands under different scenarios.

Sustainable Farms received the NSW Environment and Heritage Eureka Prize for Applied Environmental Research.

About the prizes

The Eureka Prizes celebrate outstanding achievements in Australian Science, honouring excellence across the areas of research and innovation, leadership, science engagement and school science.

Two other Academy Fellows were also shortlisted for Eureka Prizes in 2022:

- **Professor Toby Walsh**²⁹ was a finalist for the **2022 Eureka Prize for Promoting Understanding of Science**³⁰, for his leadership in the national and international debate about our artificial intelligence
- **Professor Geordie Williamson**³¹ was a finalist for the **2022 Eureka Prize for Leadership in Science and Innovation**³², for his contributions and leadership in Australia's research capacity in pure mathematics.

See the **full list of 2022 Eureka Prize winners**³³, and the Academy Fellows recognised in **2020**³⁴ and **2021**³⁵.

Academy President elected to Royal Academy of Engineering

September 21, 2022



Professor Chennupati Jagadish AC PresAA FTSE.

Australian Academy of Science President, Professor Chennupati Jagadish AC PresAA FTSE, has been elected an International Fellow of the United Kingdom's Royal Academy of Engineering.

Professor Jagadish was elected by his peers for his pioneering work in applying nanotechnology to semiconductor optoelectronic sources and detectors, as well as his significant contributions to semiconductor lasers, optoelectronic integration and nanowire devices.

His work is widely exploited in optical communication systems and infrared detectors used in the defence, biomedical and manufacturing industries.

Professor Jagadish is one of seven International Fellows elected this year, alongside 60 Fellows from within the United Kingdom and five Honorary Fellows.

Professor Jagadish said it is a great honour to be elected to such an esteemed body.

"I look forward to joining the Fellows of this national academy to champion excellence in engineering, both in practice and advocacy, and

28 <https://www.anu.edu.au/about/strategic-planning/sustainable-farms>

29 <https://www.science.org.au/profile/toby-walsh>

30 <https://www.youtube.com/watch?v=YQ9ERZ2H1yU>

31 <https://www.science.org.au/profile/geordie-williamson>

32 <https://www.youtube.com/watch?v=-zg4b7FwTgE>

33 <https://australian.museum/get-involved/eureka-prizes/2022-eureka-prize-winners/>

34 <https://www.science.org.au/news-and-events/news-and-media-releases/academy-fellows-get-their-eureka-moment>

35 <https://www.science.org.au/news-and-events/news-and-media-releases/team-responsible-cancer-research-breakthrough-wins-eureka>

bringing its many benefits to the public,” Professor Jagadish said.



The 72 new Fellows of the Royal Academy of Engineering elected in 2022. Image: supplied.

The Royal Academy of Engineering is the UK’s national academy of engineering, providing leadership for engineering and technology and independent expert advice to government in the UK and elsewhere.

It was founded in 1976 with support from the late HRH Prince Philip, The Duke of Edinburgh, and is composed of a Fellowship of almost 1,700 eminent engineers.

Professor Sir Jim McDonald FREng, President of the Royal Academy of Engineering, said he was delighted to welcome such an array of enormously talented people to the Fellowship of the Royal Academy of Engineering.

“In an uncertain world, one thing is certain – engineering skills, vision and leadership will play a crucial part in addressing the escalating domestic and global challenges that we face today.

“The combined connectivity, professionalism, experience and wisdom of the new Fellows who join us today will greatly enrich the expertise and support we can provide to the government and to society in general,” Sir Jim said.

Learn more about the Royal Academy of Engineering³⁶.

Three Aussie innovators to compete in Berlin for Falling Walls Lab 2022

September 30, 2022



Watch on YouTube³⁷



Left to right: Merryn Fraser, Clara Jiang and Mars Buttfield-Addison Photos: supplied

Merryn Fraser from the Australian National University is the winner of the seventh **Falling Walls Lab Australia event**³⁸, hosted online by the Australian Academy of Science in partnership with the **Embassy of the Federal Republic of Germany in Canberra**³⁹, **DAAD**, the **German Academic Exchange Service**⁴⁰ and **EURAXESS Australia and New Zealand**⁴¹.

Merryn’s work explores the biology of Plasmodium parasites which cause malaria, using modified cholesterol molecules to sneak antimalarial drugs past the parasite’s defences.

Second place went to Clara Jiang from the University of Queensland, whose idea of repurposing drugs which share similar gene expression fingerprints, like statins and antidepressants, could save time and money.

36 <https://raeng.org.uk/about-us/fellowship>

37 <https://youtu.be/o9aBNkHXPOs>

38 <https://www.science.org.au/news-and-events/events/international-events/falling-walls-lab-australia-finale-2022>

39 <https://www.german-embassy.com/de/Germany-Mission-Canberra>

40 <https://www.daad.de/en/>

41 <https://euraxess.ec.europa.eu/worldwide/australia-nz>

Mars Buttfeld-Addison from the University of Tasmania took third place, with her idea of using existing sensors such as astronomical radio telescopes to track space debris.

The three Australian winners will represent Australia in the hybrid Falling Walls Conference 2022 alongside the other 97 global winners, and the top 10 global finalists will compete in the Falling Walls Pitches on 7 November in the Emerging Talents category.

The question of every Falling Walls Lab is: Which walls will fall next?

Three-minute pitch

Each participant had three minutes to highlight their research work, business model or unique initiative to the jury of distinguished academics and industry representatives chaired by Academy President Professor Chennupati Jagadish.

The ten contestants presenting at the Australian finale event were selected in heats held at Falling Walls Lab Sydney, organised by **DAAD**, the **German Academic Exchange Service**⁴² and **EURAXESS**⁴³, and Falling Walls Lab Brisbane, organised by the **Queensland University of Technology**⁴⁴.

Finalists

The ten finalists who presented their breakthrough ideas:

- **Mars Buttfeld-Addison** from the University of Tasmania: Breaking the Wall of Space Debris Prevention
- **Tess Brading** from Queensland University of Technology: Breaking the Wall of Paediatric Chronic Pain
- **Merryn Fraser** from the Australian National University: Breaking the Wall of Drug Resistant Malaria
- **Clara Jiang** from the University of Queensland: Breaking the Wall of Treating Depression

- **Chanchal Kurup** from the Australian Catholic University: Breaking the Wall of Borders in Nursing
- **Danielle Lee** from Griffith University: Breaking the Wall of Antifungal Resistance
- **Oliver Lotz** from the University of Sydney: Breaking the Wall of Medical Device Bioactivity
- **Martino Malerba** from Deakin University: Breaking the Wall of Hidden Carbon Emissions in Agriculture
- **Nipuni Peththa Thantrige** from Queensland University of Technology: Breaking the Wall of Crop Loss
- **Fiona Harshini Roy Desmond Godfrey** from Monash University: Breaking the Wall of Decarbonising the Planet

Learn more about the finalists and their ideas⁴⁵.

Jury members

The event organising partners are grateful for the involvement of the jury members for Falling Walls Lab Australia:

- Professor Chennupati Jagadish AC PresAA FTSE – President, Australian Academy of Science
- Professor Lyn Beazley AO – Secretary, Education and Public Awareness, Australian Academy of Science.
- Rosie Hicks – Chief Executive Officer, Australian Research Data Commons
- Dr Hilary Howes – Head of Science and Innovation, Embassy of the Federal Republic of Germany, Canberra
- Dr Vanessa Moss – Astronomer, CSIRO
- Craig Pandy – Partner, Government and Economic Development Kearney (Australia)
- Professor Michael Schuetz – Director, Jamieson Trauma Institute

About Falling Walls Lab

Each year, the Falling Walls Foundation supports scientific organisations around the world to host

42 <https://www.daad.de/en/>

43 <https://euraxess.ec.europa.eu/>

44 <https://www.qut.edu.au/>

45 <https://www.science.org.au/news-and-events/events/international-events/falling-walls-lab-australia-finale-2022>

a **Falling Walls Lab**⁴⁶. This international forum promotes interdisciplinary connections between aspiring academics, innovators, entrepreneurs, investors, and professionals known for their excellent work.

Each year, nearly 100 international Labs are held with more than 1000 presenters, 100 of whom make it to the final in Berlin.

In 2019, Australian researcher Rhys Pirie took out first place at the Falling Walls Lab Finale in Berlin and was named 2019 Young Innovator of the Year. **Read more about his success**⁴⁷ and a **follow-up interview**⁴⁸ six months after winning the competition.

The Falling Walls Foundation is a non-profit organisation in Berlin dedicated to the support of science and the humanities. It was established in 2009, 20 years after the fall of the Berlin Wall. At its heart is the question ‘Which are the next walls to fall?’ as a result of scientific, technological, economic and sociological breakthroughs.

Learn about Fallings Walls Lab Australia and previous years’ winners⁴⁹.

Two researchers awarded Mike Smith Student Prize for insightful essays

September 29, 2022



Jessica Urwin (left) and Margaret Williams are joint winners of the 2021–22 Mike Smith Student Prize. Images supplied.

Explorations of the history of disease and of nuclear colonisation have earned two researchers

the 2021–22 Mike Smith Student Prize for History of Australian Science or Australian Environmental History.

‘The poison, leave it’

Jessica Urwin is working toward her doctorate at the Australian National University, researching the history of nuclear colonialism throughout the 20th century. Her focus is on how Australia’s nuclear industry, including uranium and radium extraction, nuclear weapons testing, and radioactive waste disposal, has intersected with colonialism in South Australia.

Her essay submitted for the prize, ‘No Time to Waste: Aboriginal resistance to Australia’s nuclear waste, 1998–2004’, follows senior women of the Kupa Piti Kungka Tjuta group and their campaign Irati Wanti – ‘the poison, leave it’ – between 1998 and 2004.

“This grassroots campaign was organised by these women in response to Prime Minister John Howard’s proposal to establish a nuclear waste dump on their Country in the late 1990s. Through examining the key messages of the women’s campaign, my essay seeks to expose some of the tensions between desert and urban communities in relation to radioactive waste storage and disposal in Australia,” Ms Urwin said.

“Dr Mike Smith’s books, *Peopling the Cleland Hills* and *The Archaeology of Australia’s Deserts* were integral to my essay. His call to scholars to ‘people’ the desert, pushing back against the historic settler tendency to consider Australia’s desert landscapes ‘unpeopled’, is at the heart of this work, and is the key message put forward by the Kupa Piti Kungka Tjuta around whom my essay revolves.

“Accepting that desert landscapes are peopled is vital to acknowledging the disproportionate impacts of the nuclear order borne by Indigenous communities the world over. Such considerations are important for both environmental historians and historians of science,” she said.

46 <http://falling-walls.com/lab/about>

47 <https://www.science.org.au/news-and-events/news-and-media-releases/australian-scientist-claims-young-innovator-year-falling-walls-berlin>

48 <https://www.science.org.au/opportunities/travel/grants-and-exchange/falling-walls-lab-australia/rhys-pirie-six-months-after-breaking-wall-broken-glass>

49 <https://www.science.org.au/supporting-science/awards-and-opportunities/falling-walls-lab-australia>

“Accepting that desert landscapes are peopled is vital to acknowledging the disproportionate impacts of the nuclear order borne by Indigenous communities the world over.”

Inspired by scholars

Joint prize-winner Margaret Williams is a research fellow at the National Institutes of Health (USA) studying the history of 20th century infection control policies as well as conducting clinical research on chronic lung infections.

“My work builds on many of the interests I developed writing my essay, ‘Biopolitics and the Bacillus: Sinophobia in an Epidemic of Bubonic Plague in Sydney, 1900–10’, especially historicising the relationships between body and space in conceptualising disease and in particular personal culpability for disease transmission,” Ms Williams said.

“Amidst the challenging research conditions of a pandemic – whose challenges led me to pursue this work – this prize has encouraged me to continue interrogating the ties between race, disease and national belonging.

“This prize has encouraged me to continue interrogating the ties between race, disease, and national belonging.”

“As I learned to read against epidemiological reports for this essay to chart the complex social relations influencing plague’s path through Sydney, I have been inspired by the community of scholars who guided this essay. I am grateful to Dr Mary Brazelton at Cambridge for her mentorship and support, as well as to the librarians at the University of New South Wales as I worked to access sources which were otherwise inaccessible during lockdown,” she said.

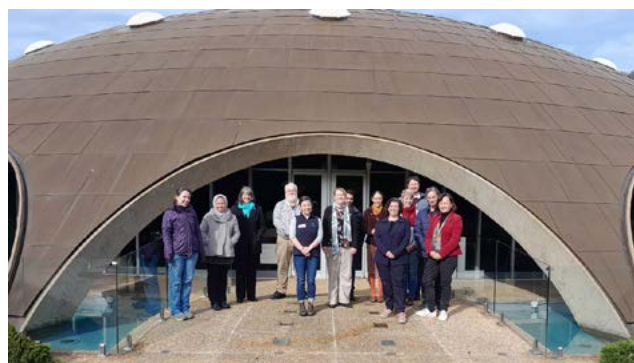
Both researchers expressed how much of an honour it was to receive the Mike Smith Prize.

Find out more about the 2021-22 prize⁵⁰, and the criteria used to select the winning entry⁵¹.

The next round of the Mike Smith Student Prize will be in 2023–24, with entries opening late in 2023.

Fenner conference explores options for plant recovery and protection

September 30, 2022



Some of the 2022 event attendees outside the Shine Dome in Canberra. Photo: supplied.

A two-stage Fenner Conference on the Environment has brought experts together to explore options for plant recovery and protection in Australia, New Zealand and across the broader region.

‘Exceptional times, exceptional plants’ was held over two sessions: one during the **Australasian Seed Science Conference⁵²** in September 2021, and the other in a hybrid meeting at the Shine Dome in June 2022.

The 2021 workshop provided an opportunity for scientists and organisations to better understand which Australasian plant species need alternatives to seed banking.

Presenters explained the range of ex situ conservation options available including seed banking, living collections, cryopreservation and tissue culture. These methods for conserving plant germplasm can help facilitate species recovery and protect species from extinction.

50 <https://www.science.org.au/supporting-science/national-committees-science/national-committee-history-and-philosophy-science/winners-mike-smith-student-prize-2021-22>

51 <https://www.science.org.au/supporting-science/awards-and-opportunities/mike-smith-student-prize-history-australian-science-or-australian-environmental-history>

52 <https://www.seedpartnership.org.au/events/australasian-seed-science-conference-2021/>

Recognition of essential information sources

The 2022 hybrid event hosted at the Academy's Shine Dome focused on Australia and was attended by representatives from a range of career stages and organisations.

Participants spoke about the project outputs and impact of the third edition of 'Plant Germplasm Conservation in Australia', and discussed complementary methods of ex situ conservation, in addition to seed banking.

A significant outcome of the conference was recognition that both formal guidelines such as the Germplasm Guidelines, and peer-reviewed journal papers, are essential information sources for conservation of exceptional species.

Databases, such as those maintained by the **Australian Seed Bank Partnership**⁵³ are also key to sharing information.

Annual Fenner conferences on the environment bring together those with relevant scientific, administrative and policy expertise to consider current environmental and conservation problems in Australia, with the aim of contributing to the formation of policies that can alleviate some of these problems. The Academy established the conferences series with the generous support of the late Professor Frank Fenner AC CMG MBE FAA FRS and the late Mrs Bobbie Fenner.

Find out more about Fenner conferences on the environment⁵⁴

More news

Developments in open science policy

The US Government has moved to make all federally-funded peer-reviewed research articles **immediately available on publication**⁵⁵, and

Australia's NHMRC has also made a similar policy change to **NHMRC-funded research**⁵⁶.

Putting research in the hands of as many as possible also means potential benefits are spread as widely as possible. Publicly funded research in Australia should be freely available and without restriction.

Truly open science requires the whole science ecosystem to collaborate to develop a sustainable, transparent, cost-effective and high-quality publishing environment.

Despite the increasing importance of data in research and public policy, Australia has no coherent national research data policy, and much of our research is not FAIR (Findable, Accessible, Interoperable and Reusable).

Read our **position statement**⁵⁷ and **report**⁵⁸ on open science policy, and our **article**⁵⁹ on open science and scientific excellence.

New article

Nurturing nature in our towns and cities



Our urban environment is home to more than just pigeons – flying foxes, koalas, rare orchids and so many other native plants and animals also live in habitats near and in towns and cities, so it's vital that urban development consider urban nature too. **Find out more**⁶⁰.

53 <https://www.seedpartnership.org.au/initiatives/australian-seed-bank-online/>

54 <https://www.science.org.au/supporting-science/awards-and-opportunities/fenner-conferences-environment>

55 <https://www.whitehouse.gov/ostp/news-updates/2022/08/25/breakthroughs-for-all-delivering-equitable-access-to-americas-research/>

56 <https://www.nhmrc.gov.au/about-us/news-centre/nhmrcs-revised-open-access-policy-released>

57 <https://www.science.org.au/supporting-science/science-policy-and-analysis/position-statements/position-statement-open-science>

58 <https://www.science.org.au/supporting-science/science-policy-and-analysis/reports-and-publications/advancing-data-intensive-research-australia>

59 <https://www.science.org.au/curious/policy-features/open-science-and-scientific-excellence>

60 <https://www.science.org.au/curious/earth-environment/nurturing-nature-our-towns-and-cities>

In brief

Japan Society for the Promotion of Science fellowships

The **JSPS Postdoctoral Fellowship Program for Foreign Researchers**⁶¹ is now open, providing opportunities for Australian postdoctoral researchers to conduct cooperative research with leading research groups in universities and other Japanese institutions. Applications are invited from suitably qualified researchers in any field of the physical sciences, life sciences, engineering, technology and medicine, and applications close 12 December 2022.

Statement

Roundtable on novel negative emissions approaches for Australia⁶²

Opportunities for scientists

Find out more about coming **opportunities for scientists**⁶³:

- Global Science and Technology Diplomacy Fund – Strategic Element
- Japan Society for the Promotion of Science fellowships
- The Danone International Prize for Alimentation
- IUPAC Distinguished Women in Chemistry or Chemical Engineering Award
- Dreyfus Prize
- A.M. Turing Award
- Gruber Prizes
- José Vasconcelos Award
- Albert Einstein World Award of Science

Fellows update

Keep abreast of the Academy Fellowship in the **Fellows update**⁶⁴:

- Honours and awards to Fellows

- Obituary for Professor Jim McLeod

Coming events

Surprising Science: The life of lightning

Date: 11 October

Venue: The Shine Dome in Canberra, and online

Hear from two scientists whose research has been sparked by lightning in two extremely different ways. Dr Hannah King from Swinburne University of Technology and Dr Emma Lovell from UNSW Sydney will demonstrate the life (and death) of lightning and what this powerful natural phenomenon can mean for us.

More about this event⁶⁵

Academy of Law and Academy of Science Joint Symposium

Date: 18 October

Venue: The Shine Dome in Canberra, and online

Join the Australian Academy of Science and the Australian Academy of Law for their annual symposium. This year the topic will focus on prohibited drugs.

More about this event⁶⁶

Science at the Shine Dome 2022

Date: 22 November – 24 November

Venue: Shine Dome and Parliament House



Science at the Shine Dome is the Academy's annual flagship event. Across three days, Australia's most influential scientists gather at the Shine Dome in Canberra to celebrate and honour outstanding achievements in science.

61 <https://www.science.org.au/supporting-science/awards-and-opportunities/japan-society-promotion-science-fellowships>

62 <https://www.science.org.au/supporting-science/science-policy-and-analysis/projects/statement-roundtable-novel-negative-emissions-approaches-australia>

63 <https://www.science.org.au/academy-newsletter/september-2022-164/opportunities-scientists>

64 <https://www.science.org.au/academy-newsletter/september-2022-164/fellows-update>

65 <https://www.science.org.au/news-and-events/events/surprising-science-the-life-of-lightning>

66 <https://www.science.org.au/news-and-events/events/academy-law-and-academy-science-joint-symposium>

It is a time for researchers from all disciplines and career levels to come together to present, share, network and collaborate.

More about this event⁶⁷

Donations

Gifts and legacies from Fellows and friends have helped the Australian Academy of Science to consolidate its independence.

Support given through general donations is directly responsible for strengthening the Academy's core activities such as scientific meetings, advice to support policy development, publications, education, public awareness and outreach, international activities, awards and fellowships.

Each time you make a gift through our annual tax or special appeals, you help to make the Academy a vital, viable and visible presence in Australia and around the world.

Learn more about giving to the Academy⁶⁸.

Find out about **Celebrate science**⁶⁹, which gives you the opportunity to dedicate a virtual copper roof tile of the Shine Dome to an Australian scientist who has made a significant contribution to science.

Donate today⁷⁰

⁶⁷ <https://www.science.org.au/news-and-events/events/science-shine-dome-2022>

⁶⁸ <https://www.science.org.au/about-us/philanthropy-and-partnerships>

⁶⁹ <https://www.science.org.au/about-us/philanthropy-and-partnerships/philanthropy/celebrate-science>

⁷⁰ <https://www.science.org.au/donate>