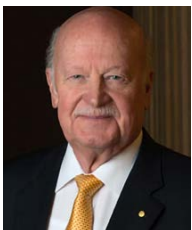




Message from the President—June 2020

June 29, 2020



The Academy, as always, is meeting its challenges head-on. I'm particularly proud that we are building on our already extensive communications capabilities with the recent launch of 'Global Science', a

unique and exciting global video partnership with the International Science Council that will connect the world's greatest scientists and thinkers with a whole new audience.

The springboard for Global Science has been our success over the past few years in creating engaging and trustworthy science content accessible by everyone. Our audience growth on social media has shown us that there is a rich appetite for science content of this nature. With the Academy's communications expertise and the International Science Council's extensive membership including science academies worldwide, we are ready to take on the big questions of our time.

The first Global Science episode in early June set the scene: former President of Ireland and UN High Commissioner for Human Rights, Mary Robinson, and President of the International Science Council, Daya Reddy, discussed the ability of the world to mobilise in the face of a

pandemic crisis—but questioned why we haven't seen the same type of response on climate change. Since then, Global Science has explored subjects as varied as the universe's missing matter, the Great Library of Alexandria, prejudice, racism, and technology predictions for the future. I look forward to further episodes.

Also internationally, this week we hosted an expert webinar on COVID-19 vaccine research in Australia and Germany. Two panellists, Academy Fellow and Nobel Laureate Professor Peter Doherty and leading German infectious diseases specialist, Professor Doctor Marilyn Addo, were welcomed by Her Excellency Lynette Wood, Australian Ambassador to Germany, and Academy Fellow Professor Hans Bachor. And in July, Israel's Professor Aaron Ciechanover, a Nobel Laureate who has changed the way cancer and other degenerative diseases are treated, will join the Academy's Chief Executive Anna-Maria Arabia online in conversation.

These are just a few examples of our many international activities. Such initiatives would not be possible without the involvement of our partners and we thank them for providing the opportunities. By working with others, the Academy is able to contribute globally to science becoming stronger, more adaptable and more resilient to future challenges. We are also able to share the best of science—which is a very rewarding experience.

John Shine

Global Science TV launches 1st episode— Can the world tackle climate change with COVID-19 urgency?

June 04, 2020



The coronavirus pandemic has proven the world is capable of a global response to address a crisis. But why haven't we seen the same type of swift action on climate change? And can we expect our leaders to pay as much attention to scientific advice for other challenges as we emerge from the pandemic?

Former President of Ireland and UN High Commissioner for Human Rights, Mary Robinson, and President of the International Science Council, Daya Reddy, discuss these issues in the **inaugural episode of Global Science**¹ published online this week.

Global Science is an initiative of the International Science Council (ISC) and the Australian Academy of Science. The ISC is a non-government organisation with a **unique global membership**² that brings together 40 international scientific unions and associations and over 140 national and regional scientific organisations, including academies and research councils.

Global Science builds on the Australian Academy of Science's established and leading science communication effort which has shown there is a thirst for accurate and engaging science content.

By tapping into the ISC's extensive network, each fortnight Global Science will broadcast interviews with the world's best scientists and some of our

greatest thinkers. Hosted by Australian journalist and clinical psychologist **Nuala Hafner**³, the 20-minute conversational episodes will entertain and inform viewers on the most notable scientific issues that society faces today.

Australian Academy of Science Chief Executive Anna-Maria Arabia said the Academy is proud to be partnering with the International Science Council on the initiative.

"It is absolutely crucial that people understand the role of science during this time of crisis and beyond. Global Science will tackle the big questions of our time with the world's leading scientific voices," Ms Arabia said.

"Global Science will tackle the big questions of our time with the world's leading scientific voices."

"The Academy has amassed 2.3 million followers on Facebook from only 9000 followers just over two years ago. I am delighted that in partnership with the International Science Council, we can expand our capability to allow leading global scientific voices to be heard at a time when we need more science, not less."

In addition to the interview with Mary Robinson and Daya Reddy, the first episode of Global Science also explores how scientists accounted for the universe's missing matter, in an interview with Associate Professor Jean-Pierre Macquart from Curtin University.

An upcoming episode will feature an interview with one of the 'fathers of the Internet', Vinton Cerf.

Watch the first episode below:



Watch on YouTube: youtu.be/A9hLy_BLjRc

¹ www.youtube.com/watch?v=A9hLy_BLjRc

² council.science/members/

³ council.science/profile/nuala-hafner/

Subscribe and follow

- Subscribe to our series on YouTube⁴
- Facebook⁵
- Twitter⁶
- #GlobalSciTV⁷

Academy a top resource for COVID-19 knowledge

June 25, 2020



Watch on Vimeo: <https://vimeo.com/402035865>

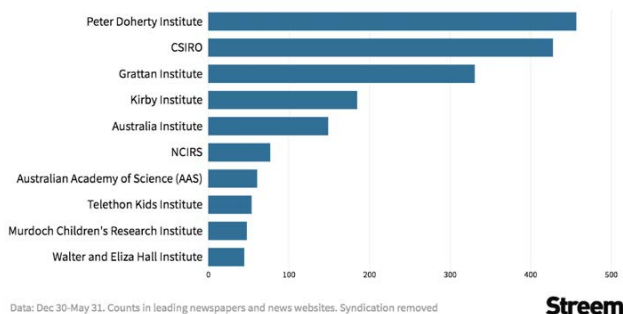
The Academy has been named in the top 10 most prominent sources of information during the COVID-19 pandemic by the **Australian Science Media Centre (AusSMC)**⁸.

The research, undertaken by media monitoring company Stroom, looked at coronavirus-related media items in major metropolitan newspapers and the nation's biggest news websites from the initial outbreak in China until the end of May.

The highest-ranked institution was the Peter Doherty Institute, closely followed by CSIRO and the Grattan Institute. **The Academy ranked seventh in the list**⁹.

Most prominent institutes of the pandemic

Mentions in coronavirus stories in leading newspapers and news websites



Courtesy of AusSMC

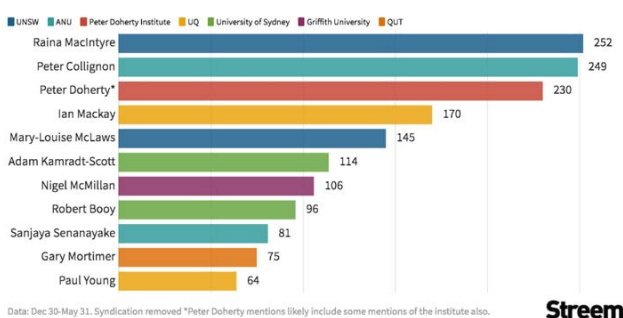
Australian Academy of Science Chief Executive, Anna-Maria Arabia, said since the outbreak of the pandemic the Academy had been working hard to provide the public with the latest and best evidence from experts regarding COVID-19.

“Not captured in this analysis are the hundreds of syndicated news stories published in regional Australian and other news outlets as a result of the extensive suite of COVID-19 videos and webinars produced by the Academy,” Ms Arabia said.

Our Fellows were also highly sought-after: Professor Peter Doherty was ranked third in media mentions of academics. He featured in **Academy-produced webinars about COVID-19**¹⁰, along with Professors Eddie Holmes, Ian Frazer, Fiona Stanley, and Carola Vinuesa.

Academics in the news during the pandemic

Mentions in coronavirus stories in leading newspapers and news websites



Courtesy of AusSMC

4 www.youtube.com/channel/UCSL1Z5osHy4DOEVByCxBh0-A

5 www.facebook.com/globalsciencetv/

6 twitter.com/globalsciencetv

7 www.facebook.com/hashtag/globalscitv

8 www.smc.org.au/

9 www.scimex.org/newsfeed/the-most-prominent-voices-of-the-covid-19-pandemic-revealed

10 www.science.org.au/curious/people-medicine/covid-19-facts

During the pandemic, the Academy launched a **COVID-19 experts database**¹¹ and is leading the operations of the **Rapid Research Information Forum**¹², producing rapid evidence-based responses to questions related to COVID-19 posed directly by the Prime Minister and cabinet ministers.

The Academy is also providing **free resources for home STEM education**¹³, publishing articles by experts under a new **'Science for Australians' banner**¹⁴, and supporting early- and mid-career researchers through **online webinars**¹⁵.

The Academy has **2.3 million followers on Facebook**¹⁶, where Academy videos and articles about COVID-19 for a general audience remain popular. It also **launched a video channel**¹⁷ on Facebook and YouTube called Global Science TV, in partnership with the International Science Council.

Lyndal Byford, director of news and partnerships at the AusSMC, said it was reassuring to see that people qualified in immunology, virology and epidemiology had generally been the most prominent academic voices during the pandemic.

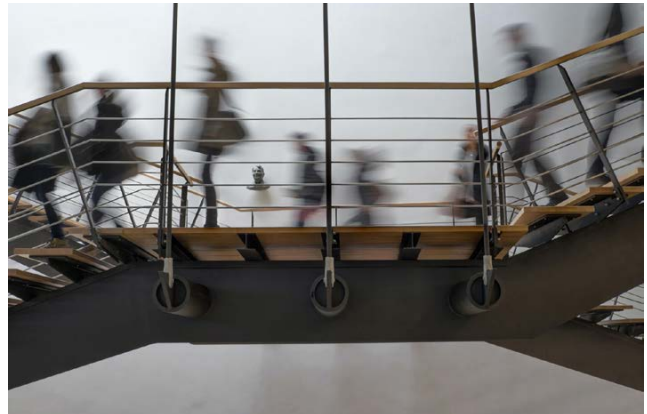
"In times of crisis, it is essential that the media can access the nation's best scientific and medical experts so that they can share clear and accurate information with the public about what we know, but also about what we don't know," Ms Byford said.

See all the Academy's content on its COVID-19 News and Resources Hub.¹⁸

Funding Australian university research

June 25, 2020

Australians have put their trust in science as a way forward to set our path out of the COVID-19 pandemic and meet the challenges arising.



Science can solve the problems of the twenty-first century, but not alone. Whether it's the quest for a COVID-19 vaccine, the emergence of artificial intelligence or the challenges of adapting to climate change, scientists worldwide are working side-by-side with colleagues of other disciplines—including the humanities—to come up with the research and solutions to the problems our world faces.

As we come to grips with the implications of the Australian Government's Job-ready Graduates Package for universities, and the challenges of the recovery from COVID-19, the Australian Academy of Science is ready to engage with government to ensure that Australian science education and research can play the role government has outlined for it.

New places and a focus on STEM welcome

The Academy welcomes initiatives to increase university places by 39,000 within three years, boost regional research capability, uncap places for Indigenous Australians, and establish a National Priorities and Industry Linkage Fund.

Reducing the loans students will incur undertaking science and mathematics are to be commended, but it is important that the measures do not cause unintended consequences. Students must be encouraged, when selecting subjects to study, to undertake as broad a curriculum as possible.

11 www.science.org.au/covid19/experts#search-experts

12 www.science.org.au/covid19/rapid-research-information-forum

13 www.science.org.au/education/academy-school-education-programs

14 www.science.org.au/curious/tags/science-australians

15 aas.eventsair.com/emcr-forum-webinars/registration/Site/Register

16 www.facebook.com/AustralianAcademyofScience/

17 www.science.org.au/news-and-events/news-and-media-releases/global-science-tv-1st-episode-can-world-tackle-climate-change

18 www.science.org.au/covid19/news-and-resources

The Australian Academy of Science stands with the nation's other learned academies in expressing concerns about the implications of the announced package across all scientific and academic disciplines. Our society needs scientists, but it would be poorer if not for people educated in the arts, social sciences, management, commerce, law and the humanities. Scientists know that all knowledge is multidisciplinary, and a system that silos knowledge and values one sort of knowledge over another will fail Australians.

Reduced resources for science and engineering concerning

The proposed changes are complex and, ironically, while reducing fees for Australian students undertaking a science degree, thereby encouraging them to choose science subjects, they also decrease the government's contribution, leading to an overall decrease in the funding for science and engineering. Unless this is addressed in the design of the National Priorities and Industry Linkage Fund, this has serious implications for the capacity of universities to enrol more science students.

The government's policy ambition is for Australian universities to educate more STEM graduates. This would be a good outcome for our nation, and for individual students. However, we are concerned that the current design of the package could create perverse incentives for universities to enrol fewer STEM students, as this package asks universities to educate more new science students from 2021, **for 16 per cent less funding per student.**

Securing the future of scientific research is key

The pandemic has exposed multiple deficiencies in Australia's historic approach to its economic base. One of these is that Australia's system of funding research, and in particular funding basic or fundamental strategic research, is broken.

The Academy encourages the government to turn its attention to safeguarding the future of Australian science research post the pandemic, by:

- examining the sustainability of Australia's funding model for research, which is overly

dependent on cross-subsidies from student (domestic and international) fee revenue

- funding the full costs of research
- addressing the decline of funding for strategic fundamental, basic research
- encouraging new partnerships and cultural change to reverse a decade of decline in business investment in research and innovation
- taking action to prevent the loss of up to 7000 researchers as a result of COVID-19 revenue losses. Research careers of early- and mid-career academics cannot be turned on and off like a tap—they require constant nourishment to maintain the pipeline of essential research capacity.

As Australia comes to grips with the recovery from the pandemic, and minimising any second wave, it is imperative that the science and research system that has served the nation well is put on a more sustainable, and secure, basis.

There is an opportunity for government to develop a wholistic response to the funding of Australian research, and the Academy looks forward to assisting the government in this endeavour.

Science academies around the world call on governments for a sustainable recovery from COVID-19

June 03, 2020

Today, to mark World Environment Day, the Australian Academy of Science joins with 17 other academies of the Commonwealth to call on governments to ensure a sustainable recovery from the COVID-19 pandemic.

The consensus statement calls for Commonwealth governments to use next year's COP26 climate conference as an opportunity to work together to tackle the ongoing crises of climate change and biodiversity loss, and to ensure that global economic recovery from the COVID-19 pandemic

is environmentally sustainable across the Commonwealth and globally.

...the global pandemic does not change the fact that the world also continues to face an ever-growing environmental emergency.



Photo by Li-An Lim on Unsplash

From the statement:

“COVID-19 has had a profound impact across the globe, affecting health and health services, impacting the global economy, and exacerbating social and economic inequalities. Global cooperation and effective policy are essential for tackling the virus and for ensuring a successful economic recovery. But the global pandemic does not change the fact that the world also continues to face an ever-growing environmental emergency. Indeed, COVID-19 has highlighted the importance of governments working together and we must build on this global response to address the climate crisis.

“On the occasion of World Environment Day, and in a month when Commonwealth leaders would have gathered in Kigali for the Commonwealth Heads of Government Meeting (CHOGM), we therefore call on governments to continue to address the joint challenges of climate change and biodiversity loss, and to ensure that global economic recovery from the pandemic is environmentally sustainable across the Commonwealth and globally. Delivering action on the urgent and interlinked challenges of climate change, biodiversity loss and sustainable energy provision presents economic, social and environmental opportunities for the whole Commonwealth.

We call on Commonwealth Heads of Government to:

- *Use the opportunities of COP26 and COP15 to coordinate discussions on the joint challenges of climate change and biodiversity and recognise their inherently interlinked nature*
- *Work with the global research community to identify scientific and holistic approaches for addressing climate change and biodiversity without causing unintended damage*
- *Grasp the opportunity of a decarbonised economy and its benefits for people and life on Earth*
- *Ensure a resilient and environmentally sustainable recovery from COVID-19.*

Read the full statement¹⁹

Academy President Professor John Shine, said science has underpinned Australia’s successful efforts to halt the COVID-19 pandemic.

“Governments need to ensure that scientific evidence underpins their approach to addressing the growing impacts of climate change and biodiversity loss on humanity,” said Professor Shine.

“As the consensus statement notes, failure to tackle these combined challenges in the increasingly narrowing timescale required will pose significant risks to human development and welfare, escalate societal inequalities, and impact all Commonwealth countries, particularly those that are most vulnerable.

“Recognising different capacities, challenges and priorities, the approaches of each nation will not be the same—but they must be informed by the best available scientific evidence.”

The statement has been signed by 18 national academies from across the Commonwealth, representing big and small nations around the globe:

- Academy of Science of South Africa
- African Academy of Sciences
- Akademi Sains Malaysia

¹⁹ www.science.org.au/supporting-science/science-policy-and-analysis/position-statements/cwealth-academies-statement-climatechange-biodiversity-energy

- Australian Academy of Science
- Cameroon Academy of Science
- Caribbean Academy of Science
- Cyprus Academy of Sciences
- Indian National Science Academy
- National Academy of Sciences of Sri Lanka
- Pakistan Academy of Sciences
- Royal Society of Canada
- Royal Society of Edinburgh
- Royal Society Te Apārangi (New Zealand)
- Rwanda Academy of Science
- The Royal Society
- Singapore National Academy of Sciences
- Uganda National Academy of Sciences
- Zambia Academy of Sciences

Further reading

The Australian Academy of Science's **Australian climate science capability review**²⁰ characterises Australia's current climate science capability and identifies how well the climate science sector is positioned to meet current and future demands for weather and climate knowledge.

The Australian Academy of Science's **science of climate change publication**²¹ explains the current situation in climate science, including where there is consensus in the scientific community and where uncertainties exist.



Watch 'Global consensus on climate change' on Facebook²²

What if we cannot find a vaccine? German and Australian scientists discuss COVID-19

July 01, 2020



LEFT: Professor Doctor Marylyn Addo. Photo: supplied



RIGHT: Laureate Professor Peter Doherty AC FAA FRS. Photo: supplied

Despite an unprecedented global research effort and record-breaking times to first in-human trials there are no guarantees that a vaccine will be available soon for COVID-19, according to one of Germany's pre-eminent virologists, Professor Doctor Marylyn Addo.

Professor Addo made the comments during a recent webinar titled 'Under the Microscope' held by the **Australian Embassy Berlin**²³, the **German Embassy Canberra**²⁴, the **Australia-Germany Research Network (AGRN)**²⁵ and the Australian Academy of Science.

The webinar was held on the six-month anniversary of receipt of the first reports of a cluster of cases of pneumonia of unknown cause in China by the World Health Organization. Now the world has just crossed over a minimum of 10 million infections and 500,000 deaths.

"I am optimistic, but nobody can say when we'll definitely have a vaccine and there are many open questions," said Professor Addo, who is head of infectious disease at the University Medical Center Hamburg-Eppendorf, Germany.

20 www.science.org.au/support/analysis/reports/australian-climate-science-capability-review

21 www.science.org.au/learning/general-audience/science-booklets-0/science-climate-change

22 www.facebook.com/watch/?v=1600820496662142

23 germany.embassy.gov.au/bein/home.html

24 australien.diplo.de/au-en/embassy-consulates/botschaft

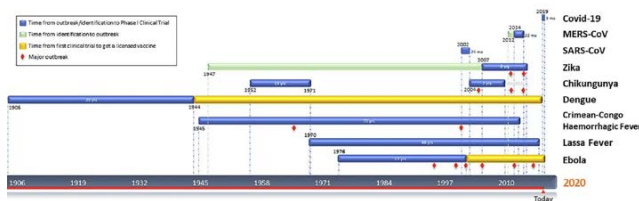
25 politicsir.cass.anu.edu.au/centres/ces/news/australia-germany-research-network

Professor Addo has developed and tested vaccines for Ebola and MERS and is currently developing a viral vector-based COVID-19 vaccine.

“While we are talking about the vaccine it’s critical that we develop other therapeutics. The repurposed drug remdesivir, developed to treat Ebola, is one of the frontrunner options for treating COVID-19, while the search for a vaccine continues,” said Professor Addo.

“It’s got the advantage of already having lots of data from clinical use. It’s not going to be our saving drug but it’s an important first step.”

UK COVID-19 vaccines: breaking record times to first-in-human trials



A timeline of historic vaccine development.²⁶ Courtesy of Professor Doctor Marylyn Addo.

Professor Addo was joined by patron of the Doherty Institute, Nobel Laureate Professor Peter Doherty AC FAA FRS. The institute has been at the forefront of Australia’s response to the COVID-19 pandemic.

On the importance of international collaboration Professor Doherty said there is a massive global commitment to finding solutions to the pandemic.

“I think in general the world is working together very well on this. There is great consciousness that this is a global problem and recognition that this has to be solved globally,” Professor Doherty said.

“This is the only truly novel respiratory virus pandemic in modern history. This is quite a benchmark and I think we should be very much warned that these things are around and out there and there is a lot more of them.”

Professor Addo said the global pandemic has shown how connected we are.

“A unilateral approach is not going to tackle this. There might be a new normal and we must talk about that. We have to be cautious about whether we’ll go back to the way things were,” Professor Addo said.

The webinar was opened by Her Excellency Ms Lynette Wood, Australian Ambassador to Germany, and Emeritus Professor Hans Bacher, Secretary for Education and Public Awareness at the Australian Academy of Science.

Industry partnership stands true through pandemic: 3M

3 July 2020

Global industry giant 3M has demonstrated its commitment to supporting STEM in Australia during COVID-19 by continuing to provide funding support to the Australian Academy of Science in partnership despite planned events and activities being cancelled.

3M began collaborating with the Academy in 2019 by supporting the inaugural Science at the Shine Dome Schools Program.

The Schools Program provided an opportunity for 10 secondary students and their teachers involved in the New South Wales’ Science Extension course to attend the **Academy’s Science at the Shine Dome 2019 event**²⁷. This unique experience inspired the participants to become even more interested in science and research and highlighted why science matters now and into the future.

Funded by 3M, the program had intended to continue in 2020 with the partnership planned to expand into Victoria, to incorporate more diverse opportunities, wider participation and the provision of STEM education resources.

However, due to COVID-19 restrictions, Science at the Shine Dome 2020 was cancelled and the program could not occur. Despite this, 3M generously released the Academy from its partnership obligations.

²⁶ www.science.org.au/files/userfiles/about/Professor-Addos-slides.pdf

²⁷ www.science.org.au/about-us/philanthropy-and-partnerships/science-students-shine-thanks-3m

Australian Academy of Science Chief Executive, Anna-Maria Arabia, said the support of industry during these unprecedented times is something to celebrate.

“3M has shown exceptional generosity and flexibility in allowing the Academy to retain the partnership support during the pandemic,” she said.

“On behalf of the entire Academy, thank you 3M for your unwavering support and intention to support the Academy in the future.”

3M Australia Managing Director, Chris LeBlanc, thanked the Academy for its tireless work and support.

“We are proud to be able to support the Academy with this flexibility in use of the grant and funding,” he said.

“I hope that this outcome will support your team while focusing on ramping up to better days on the other side of this COVID-19 pandemic.”

3M’s partnership support will contribute to the provision of independent, authoritative and trusted advice to the nation.

This includes work such as the recognition of exceptional scientists and research leaders; the formulation of scientific evidence to inform decisions; and the provision of education and communication resources.



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— Chris LeBlanc – 3M Australia Managing Director

Queen’s Birthday honours for five Academy Fellows

June 08, 2020



(rear from left) Dr Cathy Foley and Professor Andrew Roberts. (front from left) Emeritus Professor Robert Baxter, Emeritus Professor Perry Bartlett and Professor Marcello Costa.

Five Academy Fellows have been recognised in this year’s Queen’s Birthday honours, receiving the Order of Australia for their outstanding service or exceptional achievements.

Three are among those named as Officers in the General Division of the Order of Australia.

Emeritus Professor Perry Bartlett AO FAA

is recognised for distinguished service to neuroscience research, and to people living with dementia, motor neurone disease and spinal cord injury.

Professor Marcello Costa AO FAA is recognised for distinguished service to higher education and to medical research, in the field of neurophysiology and to professional scientific bodies.

Dr Cathy Foley AO PSM FAA FTSE is recognised for distinguished service to research science, to the advancement of women in physics and to professional scientific organisations. Dr Foley was elected a Fellow of the Academy this year.

Two Academy Fellows have been named Members of the Order of Australia.

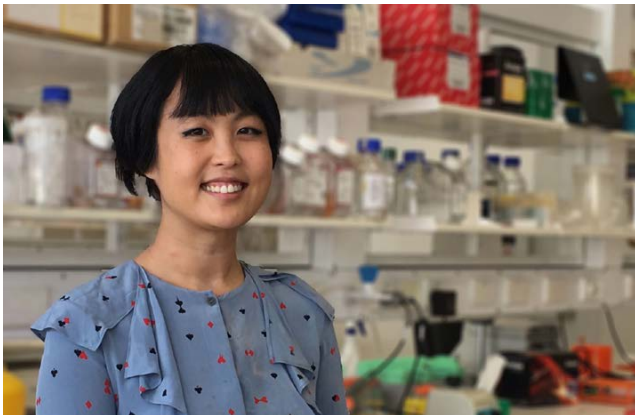
Emeritus Professor Robert Baxter AM FAA is recognised for significant service to medical

research, to endocrinology and to tertiary education.

Professor Andrew Roberts AM FAA FAHMS is recognised for significant service to medical research, to haematology and to cancer organisations. Professor Roberts was also elected a Fellow of the Academy this year.

Academy commits to supporting gender equity in higher education during and after COVID-19

June 23, 2020



The joint statement signed by the Academy declares sector commitment to immediate and ongoing gender equity actions. Photo by Dr Sarah Ch'ng and Nicholas Lim

The Australian Academy of Science has reaffirmed its commitment to gender equity in STEM by signing the 'Preserving gender equity as a higher education priority during and after COVID-19' joint statement.

The **statement**²⁸ was published recently by the Higher Education Senior Equity Practitioners Advisory Group on Gender and COVID-19.

The Academy joins a growing number of universities and other sector partners, including

Science in Australia Gender Equity (SAGE) and the Australian Academy of Technology and Engineering (ATSE), in signing the statement.

The statement acknowledges the gendered impacts of the COVID-19 pandemic, including increases in caring responsibilities and family violence and reductions in workforce participation. It declares sector commitment to immediate and ongoing gender equity actions.

The statement echoes the findings of a report in May by the **Rapid Research Information Forum**²⁹ which found hard-won gains for women's advancement in the STEM workforce were at risk of a major setback due to the COVID-19 pandemic.

Without concerted efforts to manage and mitigate the uneven impacts on women, progress towards achieving greater participation of women and girls in STEM as recommended in the **Women in STEM Decadal Plan**³⁰ will be jeopardised.

The Academy notes all tertiary institutions and higher education sector partners are invited to sign the statement.

At this crucial time, the Academy also calls on all STEM organisations and leaders to affirm their commitment to the vision of the Women in STEM Decadal Plan and gender equity in STEM by becoming **Women in STEM Decadal Plan champions**³¹.

For further information and to sign the **joint statement**³², contact:

- **Michelle Falconer**³³, Senior Manager, Office of Equity and Diversity, Western Sydney University
- **Dr Kiernyn McKay**³⁴, SAGE Project Coordinator, Western Sydney University.

28 www.sciencegenderequity.org.au/wp-content/uploads/2020/06/Australian-Higher-Education-Joint-Sector-Position-Statement_Gender-Equity-COVID-19-final.pdf

29 www.science.org.au/news-and-events/news-and-media-releases/pandemic-risks-wiping-out-hard-won-gains-women-stem

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

31 www.stemwomen.org.au/champions

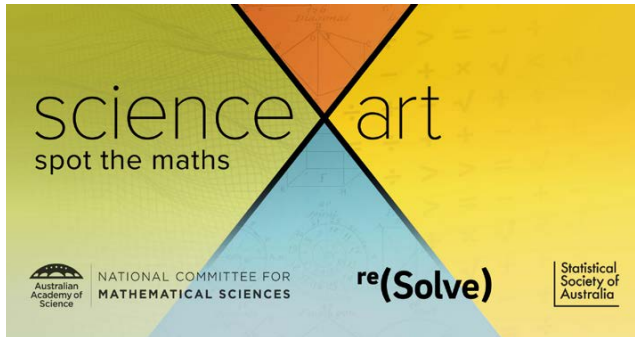
32 www.sciencegenderequity.org.au/wp-content/uploads/2020/06/Australian-Higher-Education-Joint-Sector-Position-Statement_Gender-Equity-COVID-19-final.pdf

33 m.falconer@westernsydney.edu.au

34 k.mckay@westernsydney.edu.au

Students encouraged to get creative for maths-themed photo competition

June 29, 2020



Get your cameras ready and be prepared to join the Academy in 'spotting the maths' for the upcoming **scienceXart**³⁵ (science and art) competition.

The mathematics-themed photographic competition for school students is being held in celebration of the 100th anniversary of the formation of the **International Mathematical Union**³⁶.

'scienceXart: spot the maths' is hosted by the Academy's National Committee for Mathematical Sciences, with support from the Academy's mathematics school education program, **reSolve**³⁷. The competition is sponsored by the **Statistical Society of Australia**³⁸ with a special prize for entries that feature statistics.

Submissions will be open during Term 3 2020 (28 June – 25 September). The competition will have four entry categories, spanning all school levels.

Please **sign up to the mailing list**³⁹ for up-to-date information on the competition. A selection of prizes for winning entries in the four school categories will be announced soon.

Be creative, spot the maths that is all around you. Take a photo of the maths you see in your life. Photos can be set up in advance,

but you might also spot some maths on your way to school or around your house.

The Statistical Society of Australia is also supporting another competition for school students. The **SSA National Schools Poster Competition**⁴⁰ is a fun, project-based learning activity which encourages primary and secondary school students to develop, implement and creatively report on an investigation on any topic of interest. Find out more about this competition **on the information page**⁴¹.



Find your creativity in scienceXart: spot the maths

Marine conservationist announced as Australian nominee for 2020 APEC ASPIRE Prize

June 22, 2020

Dr Amelia Wenger is the Australian nominee for the 2020 APEC Prize.

A Queensland scientist who has led marine biodiversity conservation and sustainable coastal development projects across the world has been announced as



35 www.science.org.au/scienceXart/spot-the-maths

36 www.mathunion.org/

37 www.resolve.edu.au/

38 statsoc.org.au/

39 newsletter.science.org.au/h/i/5818C9940D00EA3E

40 ssapostercomp.info/

41 ssapostercomp.info/

the Australian nominee for the 2020 international ASPIRE Prize.

Dr Amelia Wenger, a marine conservationist from the University of Queensland, is one of 12 international nominees in the running for the prestigious US\$25,000 Asia–Pacific region science prize, which is expected to be announced in August.

The prize recognises young scientists who have demonstrated a commitment to both excellence in scientific research while working closely with scientists from other APEC member economies. This year’s theme, chosen by 2020 ASPIRE Prize host nation Malaysia, is ‘Biodiversity for a Prosperous Economy’.

Dr Wenger collaborates with communities and researchers to produce knowledge and tools for conserving marine ecosystems. The research produces tangible outcomes for both biodiversity and economies.

A research project she led in Western Australia from 2014 to 2018 resulted in the world’s first evidence-based management guidelines for protecting coastal fisheries from dredging activities, which have been adopted by the Western Australian government.

Dr Wenger said she felt incredibly honoured to have her research recognised.

“I’ve had amazing mentors and collaborators who have inspired me to make my research as meaningful as possible for conservation efforts,” Dr Wenger said.

The Australian Government and the Australian Academy of Science ran a national competition to select three Australian finalists for the ASPIRE Prize.

The top three Australian ranked applicants from this competition receive a prize of AUS\$2000 each. The highest-ranked applicant then becomes the Australian nominee for the ASPIRE Prize.

Dr Carla Eisemberg from Charles Darwin University and Dr Jeremy Simmonds from the University of Queensland were also recognised as Australian finalists for this year’s prize.

Dr Eisemberg researches sustainable harvest practices of wildlife to ensure that Indigenous communities in Northern Australia and tropical Asia continue to have a traditional food supply, but also that the endangered turtles and other species that they hunt are protected. Her results may be used in Indigenous enterprises such as sustainable turtle farming as well as health policy.

The second finalist, Dr Simmonds co-led the development of a sustainability development framework for businesses to compensate for the losses to biodiversity that their activities cause. It has already had significant impact in the policy space, with several countries and jurisdictions using this framework to reconcile their development and biodiversity goals.

Professor Elaine Sadler AO FAA, Foreign Secretary of the Australian Academy of Science wished Dr Wenger the best of luck representing Australia in the next stage of the ASPIRE Prize.

“It’s exciting to see the high-calibre research of these three finalists, who early in their careers, are already making an impact for biodiversity conservation, whilst also enriching communities and economies,” Professor Sadler said.

Associate Professor Madhu Bhaskaran from RMIT University **was the last Australian to be awarded the ASPIRE Prize**⁴² in 2018. She is only the second Australian to win the prize since the award’s inception in 2011.

The APEC economies are: Australia, Brunei Darussalam, Canada, Chile, China, Hong Kong-China, Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Chinese Taipei, Thailand, United States, and Vietnam.

Further information about the ASPIRE Prize can be found at the **APEC website**⁴³.

42 www.science.org.au/news-and-events/news-and-media-releases/australian-scientist-wins-apec-aspire-prize

43 www.apec.org/aspire/aspire2020

History of science journal marks International Year of Plant Health

June 29, 2020

Historical Records of Australian Science

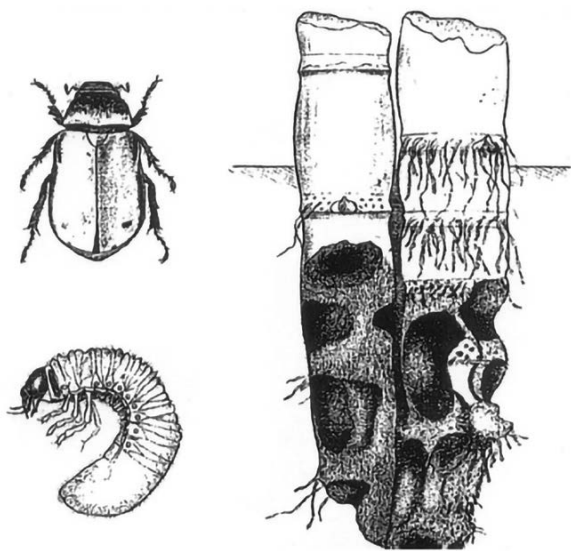


Figure 1. Part of Edmund Jarvis' drawing of the metamorphosis of the greyback cane beetle (*Lepidopta albobirta* Waterhouse) and the damage caused to the roots of stalks of sugar cane, 1916. Source: E. Jarvis, *On the Value of Poison Bait for Controlling Cane Grubs* (Queensland Bureau of Sugar Experiment Stations, Division of Entomology, Bulletin No. 4, 1916), p. 3.

The Queensland sugar industry to 1950 faced a major crisis, with crops attacked by the larvae of native beetles. In 'Entomology in the service of the state: Queensland scientists and the campaign against cane beetles, 1895–1950', Author Peter Griggs explores the biology of the beetles, research to combat them, and the solution used. This image is from the article.

The Academy is marking the United Nations' International Year of Plant Health with a 'virtual issue' of its journal, **Historical Records of Australian Science**⁴⁴. The eight articles in the virtual issue are curated from content published in past issues and are connected by the plant health theme.

Plant health plays a vital role in ending global hunger, reducing poverty, protecting the environment, and boosting economic development. Successive Australian governments have placed a high priority on scientific research into plant health and this collection of articles exemplifies the quality of the work of Australian

scientists. The articles discuss processes that improve plant health and the careers of individual scientists who have played leading roles in research, education, policy and advocacy.

Articles cover historical research on biological nitrogen fixation and sugar cane production, and biographical memoirs for Arthur McComb, Lloyd Evans, Robert Symons and Fraser Bergersen—all of whom were leaders in their fields.

Articles in the virtual issue are free for anyone to read until the end of August.

Read the virtual issue⁴⁵

The heart of the Shine Dome

June 29, 2020



The grand and unique Ian Wark Theatre, filled with Australia's best scientific minds at Science at the Shine Dome in 2019.

The Ian Wark Theatre, the grand centrepiece of the Academy's Shine Dome, is a work of art in itself and reflects generations of outstanding scientific history. Named as a tribute to one of Australia's most influential scientists, the Ian Wark Theatre is the perfect place for great minds to gather.

As restrictions across Australia ease, the Academy is now taking event bookings for 2020 and into next year. Participants in your event can listen, watch and collaborate in a hidden heritage-listed treasure that is rich with scientific and cultural history.

44 www.publish.csiro.au/hr

45 www.publish.csiro.au/hr/virtualissue/2802

Should physical distancing or travel restrictions still be in place closer to your booking date, the venue team will help you rearrange your event date and transfer all money paid to the new date.

Find out more about the Shine Dome⁴⁶ as a venue or contact the team on shinedome@science.org.au

Sir Ian Wark



Sir Ian William Wark

Sir Ian William Wark CMG CBE FAA FTSE was an eminent Australian chemist and scientific administrator who made significant contributions to Australian science.

Although his work on the physical and chemical principles underlying the electrodeposition of zinc was important, by the time the Academy was founded in 1954 Wark had spent a good part of his career working to solve some of the more general problems of science: its promotion, impact on the community, place in education and contribution to industrial and economic welfare. He was elected a Fellow of the Academy in 1954 and contributed actively to a wide range of Academy endeavours. He was elected a member of Council in 1959 and was Treasurer from 1959–63.

Wark was born in 1899 in Melbourne. He started studying engineering at the University of Melbourne but soon changed to science. Wark excelled in mathematics, chemistry and physics, and was awarded a scholarship at University College London to undertake research in the nascent field of mass spectrography. At the time, an offer to study overseas was reserved for the most outstanding students.

Wark returned to Australia in 1924 and took up a lectureship in the Chemistry Department of the University of Sydney. However, his principal contribution to science and Australia was his creation and development of the CSIR/CSIRO Division of Industrial Chemistry. He also

contributed to the growth and development of tertiary education in Australia.

Wark's scientific reputation was based on his publications on mineral flotation. His contributions demanded attention and prompted further research, and he remained active in flotation research throughout his life; just prior to his death at 84 he was involved in a joint study aimed at the experimental confirmation of a thermodynamic hypothesis.

See Wark's full biographical memoir⁴⁷

In addition to the Shine Dome theatre, the Academy also has the **Ian Wark Medal and Lecture**⁴⁸ that commemorates his contributions to Australian science and industry. The award recognises research that contributes to the prosperity of Australia where that prosperity is attained through the advancement of scientific knowledge or its application, or both.

Science policy update—June 2020

June 29, 2020



Rapid research reports

The Academy continues to provide rapid responses through the **Rapid Research Information Forum**⁴⁹ (RRIF).

In the past month, the Academy led the development of a rapid research report for the Hon Karen Andrews MP, Minister for Industry, Science and Technology, on the **viability of SARS-CoV-1 on surfaces**⁵⁰ and published updates on the **predictive value of serological testing during**

⁴⁶ shinedome.org.au

⁴⁷ www.science.org.au/fellowship/fellows/biographical-memoirs/ian-william-wark-1899-1985

⁴⁸ www.science.org.au/supporting-science/awards-and-opportunities/ian-wark-medal-and-lecture

⁴⁹ www.science.org.au/covid19/rapid-research-information-forum

⁵⁰ www.science.org.au/covid19/viability-on-surfaces

the **COVID-19 pandemic**⁵¹, first published in late April, and the **most promising vaccines for COVID-19**⁵², first published in early May.

The Academy also recently published a report on **motivators for use of the COVIDSafe app**⁵³, led by the Australian Academy of the Humanities.

Submissions

The Academy made a submission to the Senate Standing Committee on Finance and Public Administration's **Inquiry into lessons to be learned in relation to the Australian bushfire season 2019-20**⁵⁴.

The Academy also made a submission to the Senate Select Committee on COVID-19's **Inquiry into the Australian Government's response to the COVID-19 pandemic**⁵⁵.

Future Earth Australia update—June 2020

June 29, 2020

Reimagining adaptation initiative

Future Earth Australia is partnering and convening with our members and other entities on our 'Reimagining adaptation' initiative. This initiative consists of a series of roundtables with broad sectoral representation. To complement this, a group of female early- and mid-career researchers from our member cohort are producing a journal paper, and several steering committee members are producing a policy synthesis paper. These papers and the roundtable outcomes will together inform the framing of the 'Future Earth National Adaptation Summit', which is anticipated to take place later in 2020 or early 2021.

Sustainable cities and regions strategy implementation

The Future Earth Australia **Sustainable cities and regions strategy**⁵⁶ is now in its implementation

phase. We have strong interest from partners and sectors to take a whole-of-sector approach in implementing a network of urban system innovation hubs, across which Future Earth Australia would play a national coordinating role.

Sustainable oceans and coasts starting up

With the generous support of Melbourne's Lord Mayor's Charitable Foundation, Future Earth Australia will be developing a national ten-year strategy for sustainable oceans and coasts. This strategy will represent a unique, cross-sectoral and transdisciplinary effort to improve Australia's ocean and coastal future. Together we will confirm the most significant issues in meeting multiple ocean and coastal sustainability goals in Australia and the associated major knowledge gaps. This will be the second targeted strategy created by Future Earth Australia, following the successful development of the Sustainable Cities and Regions strategy launched last December at the State of Australian Cities Conference. The members of the Expert Working Group who will provide strategic direction to the oceans and coasts project **will be announced on our website**⁵⁷ shortly.



The kick-off meeting for the sustainable oceans and coasts 10-year strategy was held at the Academy in March 2020.

51 www.science.org.au/covid19/predictive-value-serological-testing

52 www.science.org.au/covid19/promising-vaccines

53 www.science.org.au/covid19/covidsafe-app

54 www.science.org.au/supporting-science/science-policy-and-analysis/submissions-government/submission-lessons-be-learned

55 www.science.org.au/supporting-science/science-policy-and-analysis/submissions-government/senate-submission-inquiry

56 www.futureearth.org.au/publications/sustainable-cities-strategy

57 www.futureearth.org.au/

Community science for sustainability initiative

Future Earth Australia has launched its call for communities to take part in its new **community science for sustainability initiative**⁵⁸. We are inviting communities to partner with Future Earth Australia and a pro bono scientist to co-produce a community science research project to address the community's sustainability priorities. These projects will be facilitated by Future Earth Australia in partnership with the American Geophysical Union (AGU), which is bringing its exceptionally successful community science model **Thriving Earth Exchange**⁵⁹ to Australia. Having already received expressions of interest on issues such as the circular economy and waste, community climate adaptation, and revegetation in a warming world from groups in Western Australia, Tasmania, Victoria and the Northern Territory, we look forward to selecting community partners at the end of June.

Early-Career Researcher and Practitioner Program goes online

The Future Earth Australia Early-Career Researcher and Practitioner (ECRP) Program has been running successfully for two years, bringing together ECRPs from across Australia to learn from each other and top experts in their fields, all while developing a transdisciplinary network of peers in the field of sustainability.

In light of the ongoing effects of the COVID-19 pandemic, Future Earth Australia moved its ECRP program online to a series of interactive webinars. These webinars run for three consecutive weeks and are organised around a central theme.

To date, Future Earth Australia has organised two series of webinars, with themes of 'The urban' and 'Oceans and coasts', the latter of which commenced on 18 June. **Find out more about our webinar series and keep up-to-date with future events**⁶⁰.

Opportunities for scientists—June 2020

June 29, 2020

Academy opportunities

Falling Walls Lab Australia

The Academy invites applications from postdocs and students, entrepreneurs, engineers and innovators to present at the virtual event Falling Walls Lab Australia 2020 in September.

Applications have been extended to Monday 20 July 2020

More information on Falling Walls Lab Australia⁶¹

External awards

Queen Elizabeth Prize in Engineering

Rewards and celebrates an individual (or up to five individuals) responsible for an innovation that has been of global benefit to humanity—£1 million

Applications close 17 July 2020

More information on the Queen Elizabeth Prize in Engineering⁶²

2021 Australian of the Year Awards

Celebrates the contributions of those leading Australians who excel in their chosen field or who make outstanding achievements for the betterment of others.

Applications close 31 July 2020

More information on the 2021 Australian of the Year Awards⁶³

58 www.futureearth.org.au/initiatives/community-science-sustainability

59 thrivingearthexchange.org/

60 www.futureearth.org.au/events

61 www.science.org.au/supporting-science/awards-and-opportunities/falling-walls-lab-australia

62 qeprize.org/nominate

63 www.australianoftheyear.org.au/

Fellows update—June 2020

June 29, 2020

Honours and awards to Fellows

Five Academy Fellows have been recognised in the **2020 Queen's Birthday honours**⁶⁴, receiving the Order of Australia for their outstanding service or exceptional achievements.

Three are among those named as Officers in the General Division of the Order of Australia:

Emeritus Professor Perry Bartlett AO FAA

is recognised for distinguished service to neuroscience research, and to people living with dementia, motor neurone disease and spinal cord injury.

Professor Marcello Costa AO FAA is recognised for distinguished service to higher education and to medical research, in the field of neurophysiology and to professional scientific bodies.

Dr Cathy Foley AO PSM FAA FTSE is recognised for distinguished service to research science, to the advancement of women in physics and to professional scientific organisations. Dr Foley was elected a Fellow of the Academy this year.

Two Academy Fellows have been named Members of the Order of Australia:

Emeritus Professor Robert Baxter AM FAA is recognised for significant service to medical research, to endocrinology and to tertiary education.

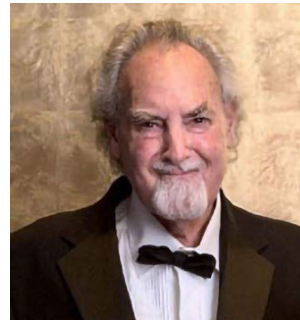
Professor Andrew Roberts AM FAA FAHMS is recognised for significant service to medical research, to haematology and to cancer organisations. Professor Roberts was also elected a Fellow of the Academy this year.

Obituaries

Professor Geoffrey Burnstock

AC FAA FRS

10 May 1929 to 3 June 2020



Professor
Geoffrey Burnstock

Professor Geoffrey Burnstock was elected to the Academy in 1971 for his work in the field of the cellular and comparative physiology of smooth muscle. He developed the 'sucrose gap technique' for electrophysiological recording from smooth muscle. This became the foremost tool for studies of the effects of drugs and ions at the membrane level. His lasting work with ATP-related signalling was first published in the 1970s, which led to a rapid surge in interest in the field and subsequently made him the most cited scientist in pharmacology and toxicology for several years during the 2000s. Much of our understanding of purinergic signalling and the current classification of purinergic receptors is attributed to his research.

Professor Burnstock was born in London and completed his BSc and PhD at the University of London. He went on to work at the National Institute for Medical Research. After developing the 'sucrose gap technique' he took up a position in the Department of Pharmacology at Oxford University. After spending a year at the University of Illinois on a Rockefeller Travelling Fellowship, in 1959 he decided to move to Australia. He worked at the University of Melbourne until 1975, starting as senior lecturer and working his way up to Professor and Chair of the Department. He returned to University College London as Head of the Department of Anatomy and Developmental Biology. After stepping down as Department Head, Professor Burnstock continued as Emeritus Professor at UCL, before returning to Melbourne in 2017.

In 1970 Professor Burnstock was awarded the Royal Society of Victoria's Research Medal. He was elected a Fellow of the Royal Society in

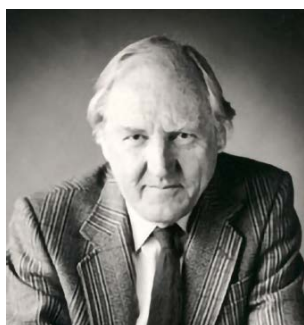
64 www.science.org.au/news-and-events/news-and-media-releases/queens-birthday-honours-five-academy-fellows

1986 and was awarded its Royal Medal in 2000. In 1999 he was made an Honorary Fellow of both the Royal College of Pathologists and the Royal College of Surgeons. In 2000 he was awarded the Janssen Award for Gastroenterology and the Royal Society of Victoria's Silver Medal. In 2003 he was made Correspondant Academicien of the Real Academia Nacional de Farmacia of Spain. In 2009 the British Neuroscience Association awarded him its Outstanding Contribution Award, and the University of Ferrara awarded him its Copernicus Gold Medal. In 2018 he received the Academy's **Macfarlane Burnet Medal**⁶⁵.

Professor Burnstock served on the Academy's Scientific Research Policy committee from 1972 to 1975 before moving to the UK. Professor Burnstock was interviewed in 2008 by Professor Robyn Williams AO FAA; [read the interview transcript](#)⁶⁶.

Professor Mervyn Silas Paterson FAA

7 March 1925 to 4 June 2020



Professor Mervyn
Silas Paterson

Professor Mervyn Paterson was elected to the Academy in 1972 for his work on experimental geology and the deformation

mechanisms of rocks and minerals, and for his pioneering instrumentation design. He pioneered the experimental study of the genesis of geological structures by using rocks themselves rather than model materials.

Professor Paterson was born in South Australia and attended the University of Adelaide from the age of 16. He then worked at the (then) CSIR Division of Aeronautics on the physics of metal fatigue. He completed his PhD on X-ray diffraction effects of deformation metals at the University of Cambridge, then moved to Chicago for postdoctoral studies.

He returned to Australia to work at CSIRO, but soon moved to the Department of Geophysics in

the Research School of Physical Sciences at the Australian National University. He remained at the ANU for 31 years and while there he developed instruments to test rock deformation. Following retirement, he continued instrument building as owner and manager of Paterson Instruments Pty Ltd, and later in association with Australian Scientific Instruments Pty Ltd.

Professor Paterson was a Fellow of the Geological Society of Australia and the Mineralogical Society of America. He became a Fellow of the American Geophysical Union in 1986 and was awarded its Bucher Medal in 2004. In 2003 he was awarded the Centenary Medal.

Professor Paterson served on many Academy committees for close to 40 years and on the National Committee for Crystallography.

Professor Paterson was interviewed in 2006 by Professor Kurt Lambeck AO FAA FRS; [read the interview transcript](#)⁶⁷.

Coming event

Big science from a small country

The Academy is teaming up with Technion Australia and the Embassy of Israel Canberra for a fascinating insight into a small country with a big scientific impact. Academy Chief Executive Ms Anna-Maria Arabia will be in conversation with Professor Aaron Ciechanover, one of the team who received a Nobel prize in Chemistry for their discovery that has transformed the way cancer and other degenerative diseases are treated.

Date: 16 July

Time: 7:00 – 8 pm AEST

[Register online](#)⁶⁸

65 www.science.org.au/news-and-events/news-and-media-releases/macfarlane-burnet-medal-awarded-smooth-muscle-man

66 www.science.org.au/learning/general-audience/history/interviews-australian-scientists/professor-geoffrey-burnstock

67 www.science.org.au/learning/general-audience/history/interviews-australian-scientists/professor-mervyn-paterson

68 technion.zoom.us/webinar/register/5015924399082/WN_X2szvW0uS9WsyWxYY9P3VQ