AUSTRALIAN ACADEMY OF SCIENCE

2024 ANNUAL REPORT

Australian Academy of Science

CELEBRATING 70 YEARS 1954–2024

ACKNOWLEDGEMENT OF COUNTRY

The Australian Academy of Science acknowledges and pays respects to the Traditional Owners of all the lands on which the Academy operates, and where its Fellows and employees live and work. The Academy recognises Australia's Aboriginal and Torres Strait Islander peoples as the first innovators and scientists of this land and honours their enduring connection to Country, from which we are committed to learn. We pay our respects to, and recognise the cultural authority of, their Elders past and present.

COVER ILLUSTRATION

In celebration of Australian science and Science at the Shine Dome 2024, the Academy's 70th anniversary montage image showcases scientific disciplines that impact us every day. It includes elements representing Australian states and territories, with a nod to the 70-year history of the Australian Academy of Science. Represented in the lower right corner (left to right) are three key historical scientific figures generated from portraits using AI: Sir Ian Potter (elected in 1978), a significant benefactor of Australian scientific institutions and Academy Fellow; Professor Dorothy Hill, the first female Fellow (1956) and first female Academy President (1970); and Professor Sir Mark Oliphant, the Academy's founding President (1954).

The butterfly illustration was sourced from the Academy archives, 'Australian Lepidoptera and their transformations' recognising the Academy's rich scientific archive holding unique collections commencing from the mid-twentieth century. Sir Mark's image is also from the Academy Archives. Help make history with us by supporting the digitisation of our valuable and unique archives.

With thanks for the following images to:

> UNSW: M2 CubeSat image, featured in the *Australia in space* decadal plan. This satellite was almost entirely designed and built in Australia in a collaboration between the Air Force, UNSW Canberra Space and a domestic supply chain of around 30 Australian companies.

> ANSTO: Scientists Dr Pauline Treble and Ms Carol Taros collecting water samples in the Jenolan caves, featured in the *Women in STEM decadal plan*.

> A. Chinn (copyright Commonwealth of Australia, Great Barrier Reef Marine Park Authority: Research scientist taking note of coral growth on Wheeler Reef, featured in the *Reef futures roundtables report*.

> Biodiversity library (page/50449604): Image of the white flower, *Illustrationes florae Novae Hollandiae, sive Icones generum quae in prodromo florae Novae Hollandiae et Insulae Van Diemen descripsit Robertus Brown*.

> Ian Potter Foundation: Sir Ian Potter's portrait.

> National Archives of Australia: Professor Dorothy Hill.

The montage image was created by graphic designer Leah Albert for the Australian Academy of Science.

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GPO Box 783
Canberra ACT 2601

Tel +61 (0)2 6201 9400
Email aas@science.org.au
www.science.org.au

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A TIME OF CHANGE. A HISTORY OF LEADERSHIP.

"For 70 years, the Australian Academy of Science has represented the pinnacle of scientific knowledge in this country. Discovery and progress based on the weight of evidence, and to illuminate truth, is a social good we just cannot afford to ignore."
— Her Excellency the Hon Ms Sam Mostyn AC, Governor-General of Australia, September 2024

Established in 1954, the Australian Academy of Science is an independent organisation of Australia's leading scientists. This report is the annual snapshot of the impact of our work. Our mission is to advance Australia as a nation that thrives by embracing scientific knowledge.

Our more than 600 distinguished Fellows represent the country's brightest minds from every state and territory. They reflect diverse disciplines – critical to advancing quantum computing, to unravelling climate change, to revolutionising cancer treatments.

Our Fellows – and the knowledge they generate and share – are a national treasure. The Academy turns Fellows' groundbreaking research into useful, high-impact advice for decision-makers wherever they reside.

Every day, our Fellows contribute expertise and leadership to shape the science system. They influence national priorities influence national priorities, engage internationally, and contribute to evidence-informed debate in our parliaments, courts and the media.

Headquartered in and alongside Canberra's iconic Shine Dome, the Academy's location is vital for strategic influence with decision-makers at the political heart of Australia.

The Academy celebrates and supports excellence in science at every stage – from elevating science and mathematics teaching in schools, to uplifting early-career researchers, and to recognising lifetime achievement.

Entering our eighth decade, we have evolved into a modern organisation responsive to the complexity of the world and reflecting the diversity and breadth of Australia's science sector.

Not with standing the current period of immense change, our core vision remains the same.

The Academy's inaugural President, the renowned physicist Sir Mark Oliphant AC KBE FAA FTSE FRS, believed wholeheartedly in the transformative power of science.

"(I have a) deep confidence in the part which science can play in making us strong and prosperous, and an idea that the proper use of science within its diverse territories may point the way to a secure and good life for all."
— Sir Mark Oliphant

Seventy years on, Sir Mark's vision is illustrated by a rich track record of accomplishments.

Australian research continues to push boundaries, shape our lives, advance our nation and our world, and inspire future generations of scientists.

The Australian Academy of Science is more energised and determined than ever to bring our leadership to deepening and widening the positive impact of science on the lives of all.

MESSAGE FROM THE PRESIDENT

As the Academy celebrates its 70TH anniversary, we find ourselves in a period of turbulent and unpredictable change: rapid changes in technologies such as generative AI and quantum science; changes in how the community values knowledge and evidence-based institutions; and increasing global strategic competition, to name just a few.

More than ever, the Australian Academy of Science is strong, poised and ready to bring science to the service of the nation, and to fulfil our mission to advance Australia as a nation that embraces scientific knowledge and whose people enjoy its benefits.

The fundamental work we do to bring evidence to decision-making and the impact it has on policy development and decision-making in our parliaments, schools and courts of law is presented throughout this annual report. In all that we do and achieve we remain independent, evidence-based, non-partisan, reliable, and respectful of knowledge sources – it's the Academy way.

This report also celebrates the people who enable our work: our Fellows who are the heart and soul of the Academy, and the many researchers across the nation and the globe with whom we collaborate and who we celebrate.

I wish to pay special tribute to all the individuals and organisations who support the Academy through donations and the gift of time and expertise. Our work and successes would not be possible without you.

This report is an opportunity to reflect and rediscover the ways in which the Academy's work is critical in responding to the current times.

Professor Chennupati Jagadish AC PresAA FREng FTSE
President

MESSAGE FROM THE CHIEF EXECUTIVE

For more than 70 years, the generosity of our Fellows has helped shape the Academy into what it is today: a national institution that stands for excellence, independence and impact.

The support of Fellows and donors has enabled us to grow, adapt, and influence some of the country's most complex challenges with clarity and credibility. We have successfully advocated for a redesign of Australia's R&D system, improved national security legislation, and played a key role in establishing a learned academy in the Pacific so our regional neighbours have a collective scientific voice.

We have led with evidence to advocate for clean indoor air standards, coordinated climate change capability, and supercomputing capability to support researchers and industry. We have investigated the implications of AI on society and on science itself.

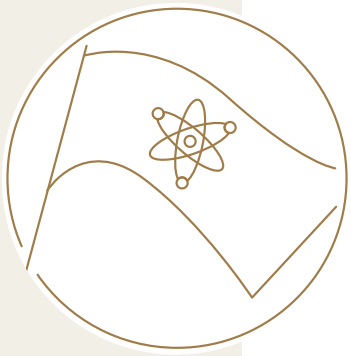
This year we have strengthened and deepened our work with Aboriginal and Torres Strait Islander peoples and launched our *Innovate reconciliation action plan*.

Operationally, we have taken significant steps to renew our governance including modernising our Council to support transparent, accountable and agile decision-making. A significant realignment of our workforce and resources is allowing us to meet our strategic objectives.

I extend my gratitude to Fellows who have contributed their time and expertise to assist the Academy, particularly those who serve on our Council. I also thank our scientific collaborators across Australia and the globe. Finally, I wish to recognise Academy staff who are committed to advancing science in Australia. It is a privilege to work with them every day.

Anna-Maria Arabia
Chief Executive

THE ACADEMY WAY

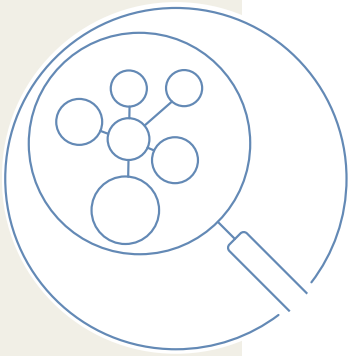


Assured independence

With no vested interests, political or otherwise, the Academy's independence is paramount.

The Academy is independent, non-partisan, evidence-led, ethical, reliable, transparent, diverse, inclusive and respectful of knowledge sources.

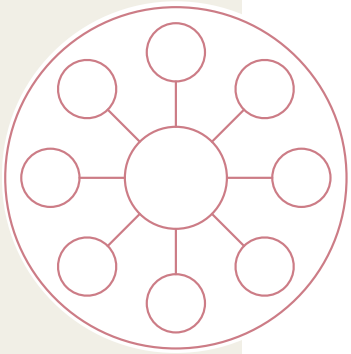
LEARN MORE



Convening power

With buy-in from researchers in Australia and across the world, we have unparalleled convening power to draw on rigorous and verified research from leading experts which forms the base of the Academy's advice to decision-makers.

LEARN MORE

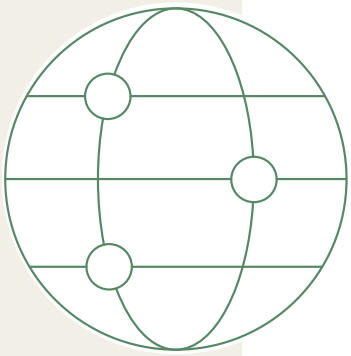


Central source of knowledge

The Academy is where knowledge across diverse scientific fields comes together.

Our core is more than 600 Fellows who are elected by their peers for their groundbreaking science. They are Australia's most distinguished scientists. They freely share their knowledge so that it can influence decisions and shape our society.

LEARN MORE



Shaping the Australian science system

The Academy shapes the Australian science system, by bringing evidence to polices that enable science and scientists to thrive, by connecting Australian science with global scientific bodies, by communicating science in an accessible way, and by fostering an environment where science education, teaching, discovery and innovation can thrive.

LEARN MORE

PARTNERING FOR IMPACT

Giving is the golden thread throughout the Academy.

The impact of our work is amplified when we join together with individuals and organisations who share our values. Through partnerships with donors, organisations and our Fellows, we advance science for the benefit of all and show that we can do more, together.

We are deeply grateful to all our donors and partners for your extraordinary generosity and the quiet efforts many of you make. We have highlighted some of the impact of our partnerships throughout our annual report.

Thank you for supporting our work, the benefits of which belong to everyone.

70 YEARS OF SCIENCE IMPACT

1951–1954

FOUNDING OF THE AUSTRALIAN ACADEMY OF SCIENCE

In 1951, Australia's leading scientists, technologists and industrialists meet in Canberra and call for a national scientific body. Their vision became reality on 16 February 1954, when Queen Elizabeth II presents the Royal Charter to Sir Mark Oliphant, officially founding the Academy as an independent organisation.

1959

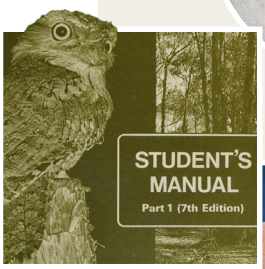
THE DOME OFFICIALLY OPENS AS THE HOME OF AUSTRALIAN SCIENCE

On 2 May 1958, Prime Minister Robert Menzies joins founding Fellows Sir John Eccles and Sir Mark Oliphant to lay the foundation stone of the Dome, each highlighting the vital role of science in shaping Australia's future. One year later, the Governor-General, Sir William Slim, officially opens the building, strategically positioned in the nation's capital at the heart of decision-making. It has since become the enduring home of Australian science where the nation's leading scientists gather to deliberate, collaborate and help shape Australia's future.

1967

PUBLISHING BIOLOGICAL SCIENCE: WEB OF LIFE

The Academy's involvement in teaching begins with the world-renowned *Biological science: Web of life* text, first published in 1967. Our educational influence endures, with Primary Connections, Science Connections and reSolve programs used by teachers and schools across Australia every day.



1958–1968

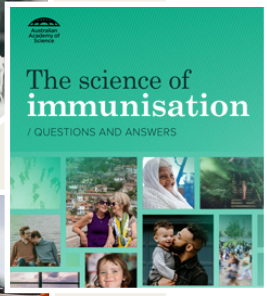
A DECADE OF SCIENTIFIC RIGOUR IN THE FORMATION OF AUSTRALIA'S NATIONAL PARKS

The Academy's Committee of National Parks works for a decade to produce the data needed to scientifically assess the effectiveness of Australia's conservation areas. The Academy's work shapes both the legislation that manages Australia's national parks and demonstrates how ecology can be used as the basis for conservation principles. Today, the Academy continues to advise on and advocate for the protection of ecosystems based on scientific evidence.

1970

ACADEMY NOMINATES FIRST FEMALE PRESIDENT

Dorothy Hill CBE FAA FRS (1907–1997) is the first female professor at an Australian university, The University of Queensland, and the first female president of the Australian Academy of Science, elected to the presidency in 1970.



2012

BRINGING SCIENCE TO THE PUBLIC: TACKLING DISINFORMATION

Launch of the first major Q&A publication, *The science of immunisation: Questions and answers* as public debate around climate change, vaccination, and other urgent issues intensifies. The program provides clear, accessible answers grounded in peer-reviewed evidence grounded in peer-reviewed evidence, aiming to counter disinformation and to inform Australians on critical topics.

2019

A LANDMARK FIRST TO TRANSFORM GENDER EQUITY IN STEM

The launch of the *Women in STEM decadal plan*. Australia's first coordinated, long-term strategy to advance gender equity across science, technology, engineering and mathematics, laying the groundwork for a more inclusive STEM future.

2020

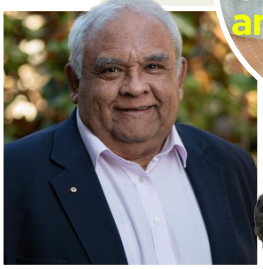
SCIENCE ADVICE IN A CRISIS

As Australia faces the twin crises of the COVID-19 pandemic and catastrophic bushfires, the Rapid Research Information Forum (RRIF) is established to provide government with fast, trusted scientific advice. The Academy, in partnership with Australia's Chief Scientist, swiftly convenes leading national and international experts, delivering peer-reviewed reports to ministers. This rapid response capability proves invaluable and now serves as a mechanism of reporting to government, informing their decisions.

2022

FIRST ELECTED INDIGENOUS FELLOW

Professor Tom Calma AO is elected as a Fellow of the Australian Academy of Science in May of 2022 for his career achievements in advancing Indigenous peoples' health, justice, education, and employment status. His research and advocacy continue to have an enduring impact on public discourse in Australia and beyond. He is an Elder of the Kungarakan and Iwaidja tribal groups, whose traditional lands are south-west of Darwin and on the Cobourg Peninsula in the Northern Territory.



2023

THE PARDON OF KATHLEEN FOLBIGG

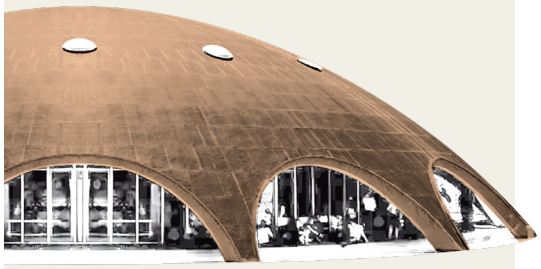
The Academy plays an essential role in ensuring scientific evidence is received and evaluated by the justice system in the case of Kathleen Folbigg. This leads to the quashing of Ms Folbigg's convictions, overturning one of the most grievous miscarriages of justice of our time.

We act boldly, bringing global scientists together and demonstrating how the justice system can be better equipped to consider complex science.

2024

PLANNING FOR A SCIENCE-DRIVEN FUTURE

In a time of growing global uncertainty, the Academy launches a bold initiative to ensure science shapes our nation's future. *Australian science, Australia's future: Science 2035* is the first-ever long-term comprehensive assessment of Australia's current science capability versus future needs. The initiative is made possible by a generous untied bequest from Professor Michael Dopita AM FAA, whose gift was made *"in the sure knowledge that the money will be well-spent in securing a more healthy, literate rational and science-driven future for all Australians"*.



CELEBRATING EXCELLENCE IN SCIENCE

609

Fellows
as of Dec 2024

37
Corresponding Fellows as of Dec 2024

24
Fellows elected in 2024

2
Corresponding Fellows admitted in 2024

The Academy's Fellows are Australia's most distinguished scientists, elected by their peers for their exceptional research and trailblazing innovations. They reflect the country's talented and diverse science sector and together are influential change-makers.

Fellows contribute their expertise and efforts in a voluntary capacity and are involved in all aspects of the Academy's work, from advising decision-makers to being a voice for science in the media.

> *"From the depths of Earth's oceans to the edges of our galaxy, Fellows nominated to the Academy today represent the groundbreaking research happening in Australia."*
> – **Professor Chennupati Jagadish** AC PRESAA

Fellows elected in 2024

- Professor Nerilie Abram FAA, climate scientist, Australian National University
- Professor Andrew Blakers FAA FTSE, engineer, Australian National University
- Professor Rachelle Buchbinder AO FAA FAHMS, rheumatologist and clinical epidemiologist, Monash University
- Professor Kylie Catchpole FAA FTSE, engineer, Australian National University
- Professor Louisa Degenhardt AO FAA FASSA FAHMS, psychologist, University of New South Wales
- Professor Calum Drummond AO FAA FTSE, molecular scientist, RMIT University
- Emerita Professor Mary Garson AM FAA, organic chemist, University of Queensland
- Professor Arthur Georges FAA, evolutionary ecologist, University of Canberra
- Professor Roslyn Gleadow FAA, plant biologist, Monash University
- Professor Dmitri Golberg FAA, physicist, Queensland University of Technology
- Professor Michael Kearney FAA, ecologist, University of Melbourne
- Professor Matthew Kiernan AM FAA FAHMS, neuroscientist, Neuroscience Research Australia
- Professor Glenn King FAA, biochemist, University of Queensland
- Professor Mark Krumholz FAA, physicist, Australian National University
- Emeritus Professor Zheng-Xiang Li FAA, geoscientist, Curtin University
- Professor Georgina Long AO FAA FAHMS, medical oncologist, University of Sydney
- Professor Shahar Mendelson FAA, mathematician, Australian ' National University
- Professor Budiman Minasny FAA, soil scientist, University of Sydney
- Professor Jose Polo FAA, biochemist, University of Adelaide
- Professor Hrvoje Tkalčić FAA, geophysicist, Australian National University
- Professor Gene Tyson FAA, microbial ecologist and bioinformatician, Queensland University of Technology
- Professor Madeleine van Oppen FAA, ecological geneticist, Australian Institute of Marine Science
- Professor Lianzhou Wang FAA, chemical engineer, University of Queensland
- Professor Willy Zwaenepoel FAA FTSE, computer scientist, University of Sydney

2024 ACADEMY HONORIFIC AWARDEES

The Academy's honorific awards celebrate the outstanding achievements of researchers across Australia, from emerging scientists to those whose lifelong dedication has shaped how we understand the world.

Our awards are almost entirely supported through the generosity of our donors. Each award is made possible by individuals, foundations, and organisations whose commitment to advancing scientific excellence helps recognise outstanding achievements in the field.

PREMIER HONORIFIC AWARDS

Macfarlane Burnet Medal and Lecture
Professor David Lindenmayer AO FAA,
Australian National University

Ruby Payne-Scott Medal and Lecture
Professor Kerrie Mengersen FAA,
Queensland University of Technology

CAREER HONORIFIC AWARDS

David Craig Medal and Lecture
Professor Justin Gooding FAA FTSE,
University of New South Wales

Haddon Forrester King Medal
Professor Stephen Cox,
Australian National University

Ian Wark Medal and Lecture
Professor Anthony Weiss AM FTSE,
University of Sydney

Mawson Medal and Lecture
Dr Adriana Dutkiewicz, University of Sydney

Suzanne Cory Medal
Professor Peter Koopman FAA,
University of Queensland

MID-CAREER HONORIFIC AWARDS

Gustav Nossal Medal
Professor Andrew Steer, Murdoch Children's Research Institute

Nancy Millis Medal for Women in Science
Professor Anita Ho-Baillie, University of Sydney

EARLY-CAREER HONORIFIC AWARDS

Anton Hales Medal
Dr Andrew King, University of Melbourne

Christopher Heyde Medal
Professor Serena Dipierro, University of Western Australia
Dr Christopher Lustri, University of Sydney

Dorothy Hill Medal
Associate Professor Ailie Gallant, Monash University

Fenner Medal
Associate Professor Ana Martins Sequeira, Australian National University

Frederick White Medal
Dr Hamish Clarke, University of Melbourne

Gottschalk Medal
Professor Eric Chow, Monash University
Associate Professor Kirsty Short, University of Queensland

John Booker Medal
Associate Professor Lining Arnold Ju, University of Sydney

Le Fèvre Medal
Professor Yao Zheng, University of Adelaide

Pawsey Medal
Associate Professor Jiajia Zhou,
University of Technology Sydney

Ruth Stephens Gani Medal
Dr Sonia Shah, University of Queensland
Dr Stephin Vervoort, Walter and Eliza Hall Institute of Medical Research

AWARDS AND PROGRAMS

Among this year's awardees:

Professor Kerrie Mengersen FAA

(Queensland University of Technology), recipient of the 2024 Ruby Payne-Scott Medal and Lecture, is a leader in statistical modelling. Her research has tackled real-world problems, from conservation efforts to cancer research. She recently led the development of Virtual Reef Diver, an online citizen science tool that enhances monitoring of the Great Barrier Reef by engaging everyday Australians in conservation efforts.

Professor Eric Chow

(Monash University), recipient of a 2024 Gottschalk Medal, has reshaped global understanding of sexually transmissible infections (STIs). His groundbreaking research identified kissing as a key mode of gonorrhea transmission, overturning century-old medical assumptions and influencing future public health education programs.

This year, a new award recognising excellence in information and communications technology was introduced, thanks to the generous support of Professor Brian Anderson AC FAA FTSE FRS and Dianne Anderson AM. The Brian Anderson Medal will be available to early-career researchers from 2025.

Explore the full list of 2024 Honorific Awardees and learn more about their research here.

60

award schemes and funding programs managed in 2024 with 28 associated committees

22

Honorific awardees

23

Research awardees

4

Conferences funded

4

Travelling fellowships funded

41

Participation support awardees enabling early and mid-career researchers to participate in career advancing opportunities

POLICY INFLUENCE AND EXPERT ADVICE

"Science without policy is science. Policy without science is gambling."
-Professor David Grey, University of Oxford

The Academy convenes experts so the scientific evidence they generate can inform decisions wherever they are made. This role is more important than ever given the proliferation of mis- and dis-information and the increasingly complex and dynamic geopolitical environment we operate in.

Our Fellows, together with some 200 members of the National Committees for Science and our team of science policy experts, are specialised at turning evidence into advice that is accessible and that shapes decisions. We also advocate for policies that strengthen Australia's science system.

REDESIGNING THE R&D SYSTEM

Following sustained advocacy by the Academy, in 2024 the Australian Government announced a once-in-a-generation cross-portfolio and cross-sectoral review of Australia's research and development system. The review is essential to designing an R&D system that is fit for purpose, supports the modern scientific enterprise, and that serves our national interest. In parallel the Academy comprehensively assessed the gap between the science we have and the science we need to support our national ambitions and address future challenges. This landmark study, **Australian science, Australia's future: Science 2035,** will be published in the second quarter of 2025.

IMPROVING NATIONAL SECURITY LEGISLATION

Following sustained and strategic advocacy, the Academy gained critical amendments to the Defence Trade Control Amendment Bill which was introduced to enable Australia's obligations under the AUKUS agreement. The Academy's work improved the balance between protecting Australia's national security and enabling the benefits that open scientific collaboration offers Australia and the globe. The embedment enshrined a fundamental research exemption in legislation giving scientists confidence to pursue discovery research without risk of breaking the law.

EXPERT ADVICE & ADVOCACY

SUPERCOMPUTING CAPABILITY: Australia will need targeted investment in next-generation high-performance computing infrastructure, the Academy advised in a 2024 evidence brief, advocating for a national strategy and roadmap. Read our submission on the future computing needs of the Australian science sector.

AI FOR SCIENCE: The Academy deepened its engagement on the implications of AI for science, building on its 2023 work advising the Australian Government on the rise of generative AI. The Academy partnered with CSIRO to contribute the Australian perspective to the International Science Council's project *Preparing national research ecosystems for AI*, advocating for responsible, coordinated approaches to AI in science policy and research. Read our submissions on AI in the public sector and AI guardrails in high-risk settings.

CLEAN INDOOR AIR: Indoor air quality remains largely unregulated, with no enforceable standards even though we spend around 90% of our time indoors. It is a clear outlier in an otherwise robust public health framework where we regulate the food we eat, the water we drink, and our outdoor air quality. The Academy has advocated for the development of indoor air quality standards. Doing so will reduce transmission of airborne disease, help us prepare for future pandemics, reduce exposure to major pollutants like bushfire smoke, reduce absenteeism due to illness in schools and childcare centres, and improve health among residents in aged care. Read our submission to the review and update of the *Indoor air quality handbook*.

SCIENCE-INFORMED LEGAL SYSTEM: Following the Academy's leadership acting as an independent scientific adviser into the second NSW inquiry into Kathleen Folbigg's convictions – which saw her pardoned and exonerated – the Academy advocated for law reform to create a more science-sensitive legal system, one more able to keep pace with rapid scientific and technological advancement. Read about the Academy's work to create a more science-aware justice system.

COORDINATED CLIMATE CHANGE CAPABILITY: Experts gathered via the National Committee for Earth System Science called for the urgent establishment of an Australian Institute for Earth System Science to fill science gaps holding back Australia's response to climate change. Read more about Australia's need for a coordinated, national institute to respond to the changing climate.

19

National Committees for Science drawing on local and global science to shape and steer scientific disciplines

31

submissions to government on topics from artificial intelligence to biodiversity

7

other publications

1

National Symposium

COLLABORATION, ENGAGEMENT AND OUTREACH

The Academy plays a unique and essential role in connecting science with diverse audiences in Australia and around the world. We champion Australian science and its benefits on the world stage, enable strategic international partnerships, and elevate the country's expertise and leadership into global networks. We are also a trusted and independent source of verified science content that informs, engages and inspires.

> **2.4 million** social media followers • **7.7 million** impressions on social media • **2,516** media mentions • **66** videos produced • **90** original articles produced • **312,000** website visitors • **18** events delivered in person and online, engaging **4,591** people • **63,000** newsletter subscribers • **112** email communications

SCIENCE AT THE SHINE DOME 2024

Over four days in September 2024, Australia's vibrant scientific community gathered at the Shine Dome to honour the Fellows elected to the Academy in 2023 and 2024, and to recognise the outstanding contributions of Academy honorific awardees.

With almost 600 delegates from 12 countries and every Australian state and territory, comprising Academy Fellows, awardees, early- and mid-career researchers, parliamentarians, and representatives from universities, government, philanthropy and industry, it was a remarkable cross-sector, multidisciplinary event. It remains the only place to learn about the depth and breadth of Australian science from the nation's best under one roof.

We thank our platinum partners – the Department of Industry, Science and Resources, CSIRO and the Department of Defence – for their leadership. Special thanks to the University of Sydney (gala dinner partner), the University of Queensland (diversity and inclusion partner), and our gold, silver and bronze sponsors, including Deakin University, QUT, Proto Axiom, and ANSTO.

Chief Executive Anna-Maria Arabia, Minister for Industry and Science the Hon Ed Husic MP, Dr Lilis Mulyani, Governor-General of Australia, Her Excellency the Hon Sam Mostyn AC, Academy President Chennupati Jagadish AC and Dr Jordan Pitt cut the cake at the 2024 Science at the Shine Dome gala dinner.

A SCIENTIFIC VOICE FOR THE PACIFIC

The Pacific Academy of Sciences was launched in October 2024 in Samoa, with 12 eminent scholars appointed as Foundation Fellows. The Pacific Islands was the only region in the world that did not have its own learned academy and a local collective voice for science.

The Academy, together with the Royal Society Te Apārangi (NZ) jointly provided crucial governance advice that supported the establishment of the new Pacific Academy.

> *"A Pacific academy, designed by Pacific scholars, will provide a systematic and permanent mechanism to bring together the region's expertise and empower local experts to be part of solutions in their region and unite as a voice for science."*
> **– Anna-Maria Arabia OAM, Academy Chief Executive**

NATIONAL SYMPOSIUM

The Academy's annual symposium convened experts across the agriculture, nutrition, and food innovation sectors. They explored how the food on our plates is changing, how Australian scientific capabilities are evolving to meet the future nutritional and agricultural needs of the nation, and how farmers are building climate change resilience.

Thank you to our event partners, the University of Sydney's Charles Perkins Centre and University of Adelaide, and program partner and host of the World Science Festival Brisbane, the Queensland Museum.

PRESERVING AUSTRALIA'S SCIENTIFIC LEGACY

The Basser Library and Fenner Archives, housed at the Shine Dome, provide a rare and personal insight into the history of Australian science.

Since 2019, more than 30,000 pages of archival material have been digitised and is now available to the public through Trove and the Academy website. Three further collections – covering radio astronomy and the early establishment and work of Mt Stromlo – were added to Trove in 2024.

Ten documents were loaned for display in the exhibition 'Outer space: Stromlo to the stars' at the Canberra Museum and Gallery.

Our 2024 annual appeal *Preserving Australia's scientific legacy* raised just over $13,000. Funds assisted towards digitising material from the David Shepherd North Collection – showcasing a little-known multi-decade scientific effort to combat sugar cane pests and diseases – and was highlighted in a special issue of the Academy's journal, *Historical Records of Australian Science*.

We thank our donors who are helping us to make these collections available to the world.

We also thank the National Library of Australia for our continued partnership via Trove through which we digitised the Joseph Pawsey Collection, the Mt Stromlo Observatory Collection and pieces from the Walter Duffield collection.

More about the Basser Library and Fenner Archives

FUTURE EARTH AUSTRALIA JOINS BELMONT FORUM

In 2024, Future Earth Australia, hosted by the Australian Academy of Science, became the Australian member organisation to the Belmont Forum, an international partnership that mobilises funding for environmental and sustainability research collaborations.

This strategic partnership opens up access to new programs and funding opportunities for Australian researchers. The Forum's dynamic international network will facilitate new scientific and diplomatic relationships, enabling greater Australian input into global research agendas.

Participating in the Belmont Forum will amplify Australia's research impact, boost achievement in our international climate and biodiversity obligations, and accelerate progress in our national sustainability plans.

> *"This is an exciting new chapter for Future Earth Australia, and we are excited to be able to bring our members and partners along with us."*
> **- Dr Jemma Purandare, co-chair, Future Earth Australia**

SPEAKER SERIES SHEDS LIGHT ON THE FUTURE

As part of our 70th anniversary celebrations, the 2024 annual speaker series unearthed inspiring tales of some of the earliest Academy Fellows who shaped Australian science, and whose impact reverberates today.

At each event, a current Academy Fellow teamed up with an early-career researcher to shed light on an early Fellow's work – their challenges, triumphs and breakthroughs – as well as examine how their work continues to impact us today.

Speakers traversed immunology (Sir Frank Macfarlane Burnet), nuclear physics (Sir Mark Oliphant), and coral reefs (Professor Dorothy Hill), among other topics.

More than 850 people attended in person and online, with a further 2,278 views of event recordings.

850
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2,278
views of event recordings

REGIONAL HUBS

Regional hubs facilitate networking and engagement among Fellows within the same state or territory, providing Fellows and Academy awardees an opportunity to share their scientific work with each other.

Throughout the year, the President and Chief Executive visited Fellows in every major city across the nation via the regional hubs. These visits were an opportunity to connect, listen, and witness firsthand the extraordinary work underway.

Thank you to the regional chairs and co-chairs for their dedicated efforts in organising these vital engagements and ensuring their success.

Dr TJ Higgins AO FAA FTSE (ACT chair)

Professor Alison Rodger FAA (NSW chair)

Professor Kathy Belov AO FAA (NSW co-chair)

Emeritus Professor Peter Koopman FAA (QLD chair)

Professor Huijun Zhao FAA FTSE (QLD co-chair)

Professor Geoff Fincher AO FAA FTSE (SA chair)

Professor Barbara Nowak FAA (TAS chair)

Dr Ian Allison AO FAA (TAS co-chair)

Professor Rachel Webster AO FAA (VIC chair)

Professor Jamie Rossjohn FAA FAHMS FRS (VIC co-chair)

Professor Stephen Poles FAA FTSE (WA chair)

Professor Kliti Grice FAA (WA co-chair)

BACKING OUR NEXT GENERATION

To unleash the full power of Australia's science capabilities, and face challenges spanning climate, health and technology, we need future thinkers who are talented, confident, creative and diverse.

We are dedicated to Australia's next-generation scientists and innovators – from empowering educators to deliver STEM content that engages and inspires primary and secondary students, to supporting early- and mid-career researchers as they navigate a career in science and technology.

REIMAGINING SCHOOL EDUCATION IN MATHEMATICS AND SCIENCE

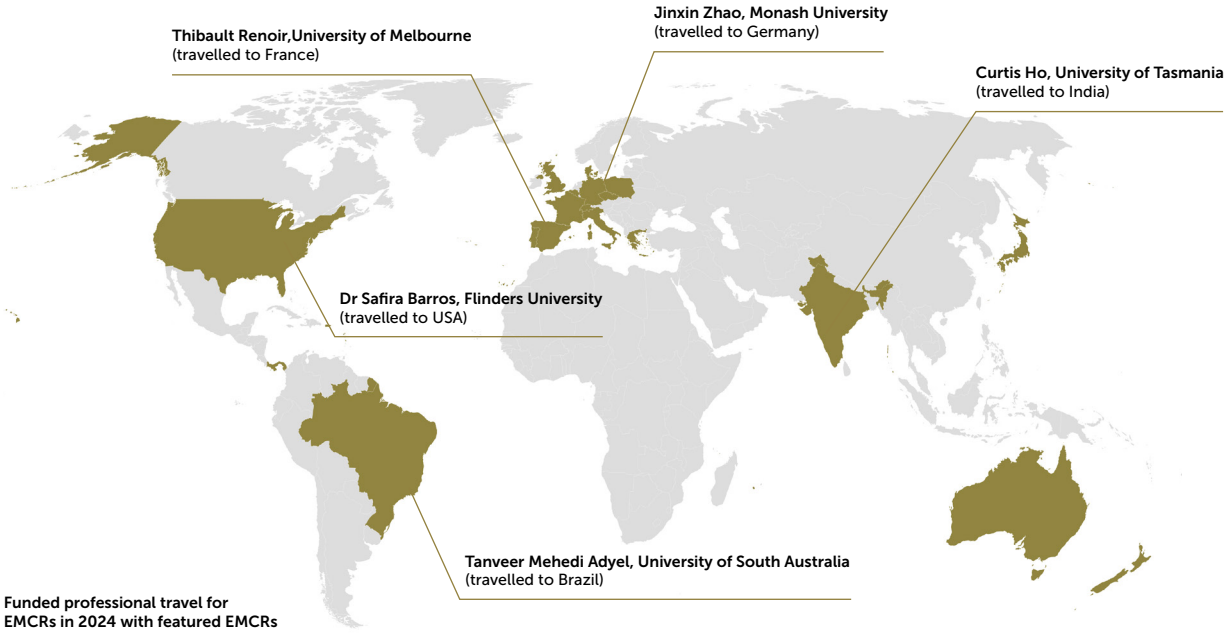
The Academy supports Foundation to Year 10 Australian teachers to develop their mathematics and science teaching practice and embrace the opportunities that STEM education offers through our innovative programs.

With the performance of Australian schools in science and maths recently in the spotlight, it's timely that the Academy released new education resources to boost the confidence and capability of the nation's teachers to deliver Australia's science and mathematics curriculum.

The new system was launched at Hughes Primary School in the ACT with the support of Minister for Education, the Hon Jason Clare MP. These new digital tools and resources are a complete reimagining of our professional learning offerings, guided by evidence, experts and, importantly, teachers.

SUPPORTING EARLY- AND MID-CAREER RESEARCHERS (EMCRs)

The Academy's efforts to uplift and shape the emerging generation of Australian science leaders span policy and advocacy via the Early- and Mid-Career Researcher (EMCR) Forum, funding and professional development through a range of Academy initiatives as well as high-profile international engagement opportunities.



Funded professional travel for EMCRs in 2024 with featured EMCRs

THEO MURPHY INITIATIVE (AUSTRALIA)

The Theo Murphy (Australia) Fund supports scientific discovery and activities that provide benefits to Australia's early- and mid-career researcher community.

> $300,000 to support 23 projects spanning astrophysics to health.

Theo Murphy, a Melbourne solicitor who passed away in 2006, left a substantial bequest to the Royal Society of London. His generous gift established the Theo Murphy (Australia) Fund, administered by the Australian Academy of Science and dedicated to early- and mid-career researchers across Australia.

EMCR FORUM

The EMCR Forum's engagement with funding bodies and government focused on funding mechanisms, career progression, and boosting diversity and inclusion. The Forum became a Category 3 member of the International Science Council in 2024, strengthening its role in international policy discussions and research reform.

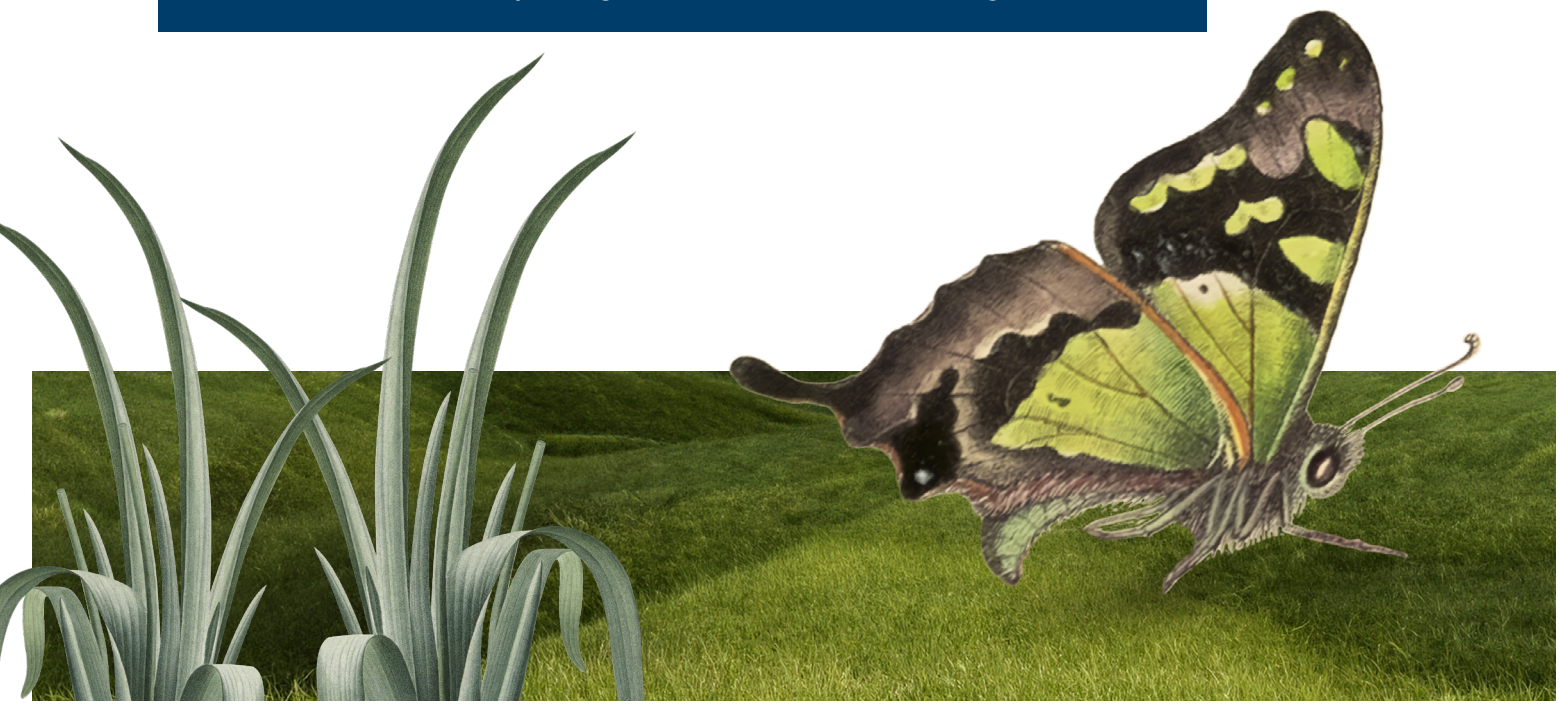
EARLY CAREER SCIENTISTS INTERNATIONAL FUND FOSTERS ASIA-PACIFIC COLLABORATION

Established in June 2024, the Early Career Scientists International Fund supports graduate students and young researchers from the Asia–Pacific to travel to Australia for learning opportunities.

The fund was made possible by a leadership gift from Emeritus Professor Cheryl Praeger AC FAA and Dr John Henstridge.

This transformative gift will empower young researchers from the Asia–Pacific to collaborate internationally and enhance their research capabilities for many years to come.

"Science and, for us, especially the mathematical sciences, are important to our society in numerous ways, underpinning all technological advances and helping us respond to global challenges. We have benefited from the training and resources which allowed us to pursue careers in mathematics and statistics, and also both of us have interacted with numerous young scientists internationally, particularly from our region."
– Emeritus Professor Cheryl Praeger AC FAA and Dr John Henstridge



INTERNATIONAL ENGAGEMENT

The Academy continued to strengthen Australia's role in international science engagement through its hosting of the **International Science (ISC) Regional Focal Point for Asia and the Pacific (RFP-AP)**. As the regional hub for the ISC, the RFP-AP has significantly elevated Australia's profile in science diplomacy, fostering deep, strategic partnerships across the Asia–Pacific.

In 2024, the RFP-AP supported the establishment of the **Pacific Academy of Sciences** — the world's newest learned academy. The Pacific Academy of Sciences was launched in Samoa in October, with 12 Foundation Fellows elected from across the Pacific Islands. The Pacific Academy is already shaping regional policy conversations and strengthening scientific leadership across the region. The RFP is working to fully operationalise the Pacific Academy, drawing together partners in government, philanthropy and academia across the Pacific region.

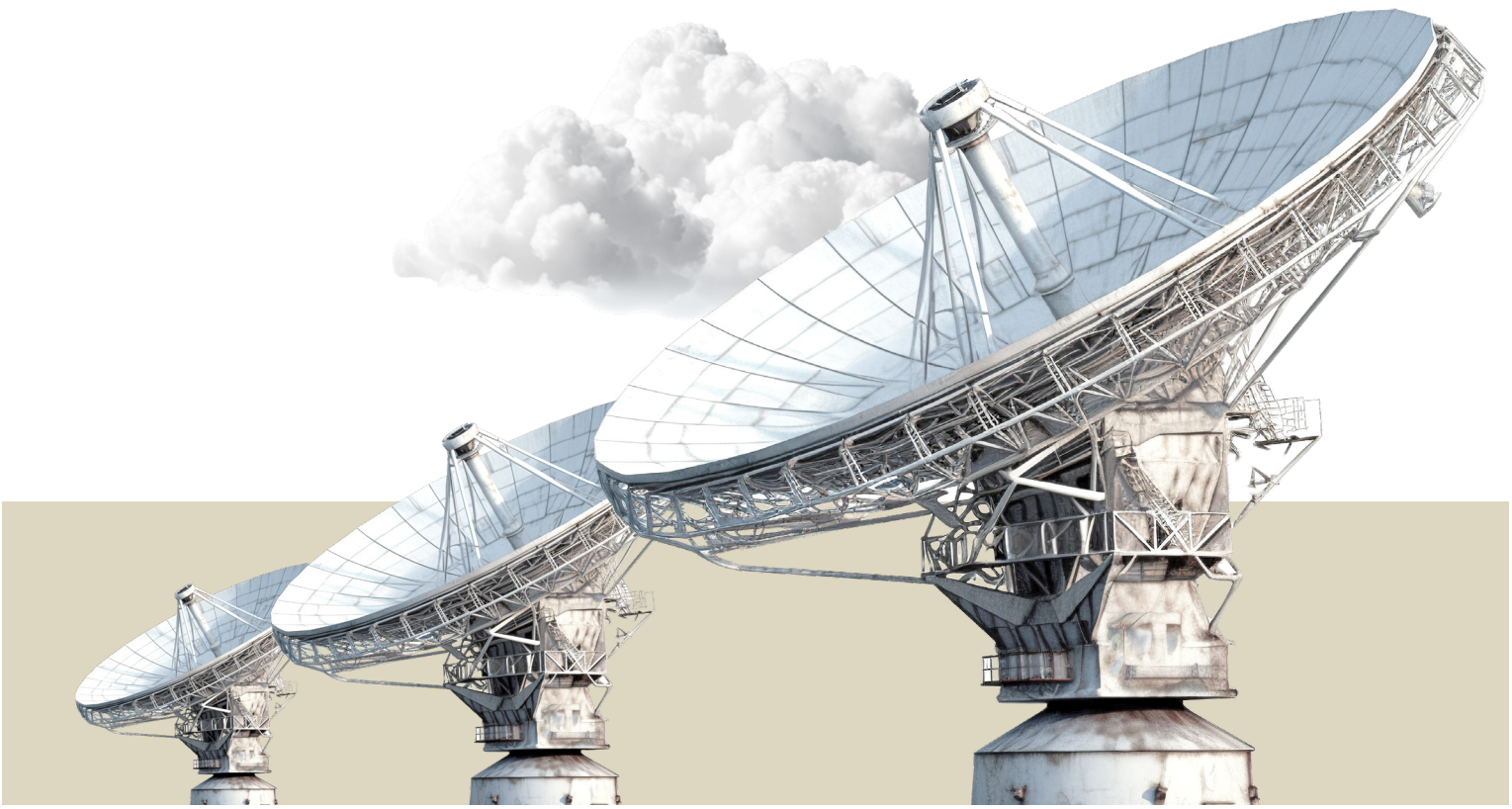
In parallel, the RFP-AP's Asia–Pacific Academic Mentoring Program has matched early-career researchers from the Pacific with senior scientists in Australia and New Zealand, building professional capacity and lasting research connections. The program, which was 400% oversubscribed in its first year of operation, will be doubled in 2025 to include scientists from low- and middle-income countries in Asia.

To further build science systems in the region, the RFP-AP delivered tens of **science communication and policy workshops**, reaching hundreds of scientists, journalists and policymakers across Asia and the Pacific. These programs are helping to build capacity in the region and foster scientific connections in the Asia–Pacific region.

The Academy facilitated participation in the prestigious 73rd Lindau Nobel Laureate Meeting in Berlin. Eleven young scientists joined Academy Fellows in the Australian delegation to engage with Nobel Laureates and peers, exchange ideas and foster international collaborations.

In August, the Academy hosted the ninth Falling Walls Lab Australia finale where early-career researchers presented innovative ideas across various STEM disciplines to tackle the world's biggest challenges. Three winners were selected to represent Australia at the global Falling Walls Lab finale in Berlin, providing a platform for Australian EMCRs to showcase their trailblazing research to a wider international audience.

We thank Merck for their long-term partnership empowering this next generation of innovative leaders and supporting this annual event.



SOCIAL RESPONSIBILITY

Elevating scientific excellence and empowering the next generation of outstanding researchers means removing barriers to participation and embracing diversity, inclusion, and sustainability. The Academy's leadership in this area comes in many forms.

INNOVATE RECONCILIATION ACTION PLAN

During Science at the Shine Dome 2024, the Academy launched its new *Innovate reconciliation action plan* (RAP). The Academy's *Innovate RAP* outlines the practical steps we will take to drive reconciliation and positive change. It reaffirms our commitment to the journey of reconciliation.

The *RAP* sets out the next steps the Academy will take to make systemic, strategic and sustainable contributions across our organisation to advance reconciliation. It seeks to ensure that the contributions to scientific knowledge from Australia's First Nations peoples are respected and celebrated, and that we draw on diverse knowledge sources, including Traditional Knowledges, to build a stronger, more innovative, and more sustainable nation and world.

More about the Academy's Innovate Reconciliation Action Plan

> *"While there is movement to improve engagement by moving from projects done 'on us' to projects done 'with us' and 'by us', to do so will require long-term and strategic engagement of Indigenous communities to move from merely nice-to-have representation to genuine partnership."*
> **Dr Jordan Pitt (Birri Gubba), Chair, EMCR Forum**

TRI-ACADEMY PARTNERSHIP ON INDIGENOUS ENGAGEMENT

Indigenous scholars and allies gathered in early November 2024 for the inaugural Tri-Academy Partnership on Indigenous Engagement, a collaboration between the Australian Academy of Science, the Royal Society of Canada, and Aotearoa New Zealand's Royal Society – Te Apārangi.

The Summit, held on the unceded territories of the xʷməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaɬ/Selilwitulh (Tseil-Waututh) nations in Vancouver, Canada, aimed to share First Nations' knowledge across our three countries, to advance reconciliation, and improve engagement with Indigenous researchers and communities.

The Australian delegation was led by Academy Fellow and Kungarakan Elder and Iwaidja man Professor Tom Calma AO FAA FASSA FAHA. Other delegates included Aboriginal and Torres Strait Islander scientists Michelle Hobbs (Bidjara), Professor Raymond Lovett (Ngiyampaa/Wongaibon), Professor Bradley Moggridge (Kamilaroi), Dr Jordan Pitt (Birri Gubba), and Dr Katrina Wruck (Mabuigilai/Goemulgal), as well as Chief Executive Anna-Maria Arabia.

The 2024 Tri-Academy Partnership was the first of a three-year commitment to the gathering of Indigenous knowledge holders across the three countries, with the next summit to be hosted by the Royal Society of New Zealand Te Apārangi in 2025, and the third in Australia, hosted by the Australian Academy of Science in 2026.

More about the Tri-Academy Partnership

THE ENDOWMENT: A LASTING LEGACY

The Endowment was established through the foresight and generosity of donors and Fellows who recognised the need for a stable, long-term funding source to support the Academy's mission and secure its independence. Over the years, gifts from individuals, bequests, and strategic investments have helped grow the Endowment, strengthening the Academy's financial independence.

Our Endowment underpins and strengthens everything we do. We aim to ensure that its longevity and integrity is preserved so that the Academy can continue to bring science to the service of the nation for decades to come.

BEQUEST CIRCLE

We would like to extend our heartfelt gratitude to our bequest circle donors for their generous and enduring support. Their legacies are a powerful investment in the future of science and ensure that the work we do today will resonate for years to come. We are grateful for your dedication to our mission. Bequest circle donors are acknowledged in the donor honour roll.

Learn more about supporting the Academy

THANK YOU TO OUR DONORS

We are deeply grateful to all of our donors for their extraordinary generosity. Thank you.

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- Sir Jack Ellerton Becker FAA
- Professor GW Kenneth Cavil Bequest
- Estate of the late Mr Thomas Lew Davies
- Professor Michael Dopita AM FAA
- Breakthrough Prize Foundation
- The Estate of the late Dr Margaret Middleton
- Estate of the late Ian Gordon Ross AO FAA
- Estate of the late Elizabeth Jane Gray Russell
- Professor John Shine AC FAA FRS

ACADEMY CIRCLE

- Professor Brian Anderson AC FAA FTSE FRS and Dianne Anderson
- David Anstice AO
- Professor Michael Barber AO FAA FTSE
- Ian Potter Foundation
- Professor Suzanne Cory AC FAA FAHMS FRS and Professor Jerry Adams FAA
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- Distinguished Professor Chennupati Jagadish AC PresAA FRS FREng FTSE and Dr Vidya Jagadish
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- The late Professor Raymond Le Fèvre FAA FRS
- The late Professor Ian McDougall FAA
- Professor John Newton FAA
- Emeritus Professor Cheryl Praeger AC FAA and Dr John Henstridge
- Rod Rickards Family
- Professor Brian Schmidt AC FAA FRS Nobel Laureate and Dr Jenny Gordon
- Professor Terence Speed FAA FRS
- The late Sir Frederick White KBE FAA FRS

View full donor list.

OPERATIONAL EFFECTIVENESS

Organisational renewal remains central to our ongoing effectiveness and impact. In alignment with the Academy's *Strategic plan 2023–2028*, we have commenced a comprehensive renewal of our governance framework, including a full revision of our constitutional documents and a restructure of our governing body, to ensure it supports transparent and accountable decision-making.

Our program of operational renewal recognises the importance of being agile, transparent, and effective in how we work. In 2024, we undertook a significant realignment of our workforce and resources to better deliver on our strategic objectives and enhance cross-functional collaboration for greater impact.

KEY PEOPLE

at 31 December 2024

ACADEMY COUNCIL

President	Professor Chennupati Jagadish AC PresAA FRS FREng FTSE
Vice President and Secretary Physical Sciences	Professor Ivan Marusic FAA FTSE FRS
Vice President and Secretary Biological Sciences	Professor Bob Graham AO FAA FAHMS
Treasurer	Professor Marilyn Anderson AO FAA FTSE
Foreign Secretary	Professor Frances Separovic AO FAA
Secretary Science Policy	Professor Ian Chubb AC FAA FTSE
Secretary Education and Public Awareness	Professor Lyn Beazley AO FAA FTSE
Member	Professor Alan Andersen FAA
Member	Professor David Bowtell FAA FAHMS
Member	Professor Patrick De Deckker AM FAA
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Member	Professor Glenda Halliday AC FAA FAHMS
Member	Professor Colin Raston AO FAA
Member	Professor Margaret Sheil AO FAA FTSE
Member	Professor Stephen Simpson AC FAA FRS
Member	Professor Svetha Venkatesh FAA FTSE
Member	Professor Ian Wright FAA

ACADEMY EXECUTIVE LEADERSHIP

Chief Executive	Anna-Maria Arabia OAM
Chief Operating Officer	Melissa Abberton
Director Policy and International	Chris Anderson
Director, International Science Council Regional Focal Point for Asia and the Pacific	Ronit Prawer
Head of ICT	Andrew Hood
Head of Philanthropy	Kate Groves
Head of Programs	Allison Hornery

As part of the realignment of our workforce in 2024 the new role of Director of Engagement was established and was filled in early 2025 by Dr Rod Lamberts.

FINANCIAL REPORT

Read the Academy's Financial Report 2023–24

CONSIDER A GIFT FOR THE NATION

We invite you to explore how your support can leave a legacy and contribute to our mission.

Email: philanthropy@science.org.au

Phone: +61 (02) 6201 9460