National Committees for Science



National Committees for Science 2023 annual meeting proceedings

Overview

The 2023 annual meeting of the chairs of the Australian Academy of Science's 22 National Committees for Science was held on Monday, 13 November, in the Shine Dome, Canberra. This document contains an overview of the presentations and discussions from the meeting.

Agenda

1	Welcome	Chennupati Jagadish, President
2	Context	Anna-Maria Arabia, Chief Executive
3	2023/24 review of the National Committees	Steven Chown, Chair NC Review Panel
4	International science policy and diplomacy overview	Frances Separovic, Foreign Secretary
		 Nancy Pritchard, Director International Programs and
		National Committees
		Petra Lundgren, Director ISC
		Regional Focal Point Asia-Pacific
5	Domestic policy overview	Chris Anderson, Director Science Policy
6	Panel discussion	Anna-Maria Arabia, Chief Executive
		 Frances Separovic, Foreign Secretary
		Ian Chubb, Secretary Science Policy
7	Discussion on ARC matters	Steven Weller, ARC Executive Director, Engineering and Information Sciences
		Gavin Reid, ARC Executive Director, Mathematics, Physics, Chemistry and Earth Sciences
8	Workshop: 2024 decadal plan	Academy science policy team
	tor Australian science	Lead: Hayley Teasdale

Attendees

Committee chairs and delegates

- NC Astronomy: Professor Stuart Wyithe
- NC Agriculture, Fisheries and Food: Professor Holger Meinke
- NC Antarctic Research: Professor Nerilie Abram
- NC Brain and Mind: Professor Jason Mattingley
- NC Biomedical Sciences: Professor Philip Poronnik
- NC Chemistry: Professor Kate Jolliffe FAA
- NC Data in Science: Dr Adrian Burton
- NC Ecology, Evolution and Conservation: Professor Stuart Bunn FAA
- NC Earth Sciences: Professor Ian Jackson FAA
- NC Earth System Science: Professor Andy Pitman FAA
- NC Geographical Sciences: A/Professor Kirsten Martinus

- NC History and Philosophy of Science: A/Professor Rachael Brown
- NC Information and Communication Sciences: Professor Deborah Bunker
- NC Medicine and Public Health: Professor John Mattick FAA
- NC Mathematical Sciences: Professor Adrian Baddeley FAA
- NC Materials Science and Engineering: Professor Lianzhou Wang FAA
- NC Nutrition: Professor Helen Truby
- NC Physics: Professor Halina Rubinsztein-Dunlop FAA
- NC Space and Radio Science: Professor Fred Menk
- Future Earth Australia: Ms Jemma Purandare and Professor Wendy Steele

Academy Executive Committee members

- Professor Chennupati Jagadish AC PresAA FREng FTSE, President
- Professor Frances Separovic AO FAA, Foreign Secretary
- Professor Ian Chubb AC FAA FTSE, Secretary Science Policy

Guests

- Professor Steven Chown FAA, Chair 2023/24 National Committee Review Panel
- Professor Gavin Reid, ARC Executive Director, Mathematics, Physics, Chemistry and Earth Sciences
- Professor Steven Weller, ARC Executive Director, Engineering and Information Sciences

Academy staff presenters

- Anna-Maria Arabia, Chief Executive
- Chris Anderson, Director Science Policy
- Dr Petra Lundgren, Director ISC Regional Focal Point for the Asia-Pacific
- Nancy Pritchard, Director International Programs and National Committees
- Dr Hayley Teasdale, Manager Science Policy Projects

Contact

For more information, contact the National Committees for Science Office at: <u>nc@science.org.au</u> or 02 6201 9400

Welcome

Professor Chennupati Jagadish AC PresAA FREng FTSE President, Australian Academy of Science

The below is an excerpt from Professor Jagadish's welcome speech to the attendees.

Before we commence our proceedings today, it is a privilege to extend a warm welcome and heartfelt acknowledgment to the Traditional Owners of all the lands on which the Academy operates and its Fellows live and work. Today, we are gathering on Ngunnawal land, and we would like to pay our respects to the Elders of this country - past, present and emerging. They hold the memories, traditions, cultures and hopes of Aboriginal and Torres Strait Islander peoples.

On behalf of the Academy, I want to express sincere gratitude for the dedication and effort each of you has invested in the National Committees. Having served as a National Committee Chair and member myself, I fully understand the challenges posed by tight timelines, competing priorities and the dynamics inherent in committee work. Your leadership, support and constructive responses to emerging issues are truly appreciated.

The National Committees have achieved remarkable milestones over the past year, including:

- Fostering collaboration and enhancing communication between disciplines;
- Establishing connections between disciplinary communities and international societies and unions;
- Hosting impactful events and webinars;
- Progressing decadal plans;
- Developing new decadal plans;
- Strengthening communities and pathways for early- and mid-career researchers (EMCRs); and
- Celebrating excellence through the awarding of prizes and fellowships.

In addition, the National Committees have played a pivotal role in providing invaluable science policy advice on critical matters, such as the National Robotics Strategy, generative artificial intelligence, quantum physics talent pipelines, critical minerals strategy and the Draft National Science and Research Priorities.

With the collective knowledge, tools and connections within our Fellowship, National Committees and staff, we possess the ability to shape the future of science in our country. Today signifies the commencement of harnessing our visions, acknowledging our operating contexts, and laying the foundation for a clear, unified pathway toward our shared ambitions.

Thank you for your unwavering commitment and contributions to the advancement of science and the Academy's mission. Let us collectively chart the course for a future marked by innovation, collaboration, and transformative impact.

Program highlights

Context

Academy Chief Executive, Anna-Maria Arabia, provided key governance updates, including details of the Academy's 2023 Strategic Review currently being implemented across the Academy's various programs. To better reflect the role of National Committees in shaping domestic science policy and connecting their disciplines to international scientific bodies, the National Committees have also shifted to the remit of Foreign Secretary, Professor Frances Separovic, and Secretary Science Policy, Professor Ian Chubb.

Professor Steven Chown, chair of the panel undertaking the 2023/24 review of the National Committees for Science, provided an update on the progress and scope of the review, due for completion in March 2024.

International science policy and diplomacy updates

Dr Petra Lundgren shared recent developments on the International Science Council's Regional Focal Point for Asia and the Pacific, including the recent agreement to establish a Pacific academy for science and humanities.

Professor Frances Separovic and Director of International Programs and National Committees, Nancy Pritchard, also provided further details on key bilateral partnerships and funding collaborations supported by the Academy throughout 2023.

Domestic policy overview

Professor Ian Chubb and Director of Science Policy, Chris Anderson, shared updates on the directions and trends of the contemporary national science policy landscape, as well as the Academy's upcoming science policy priorities.

Panel discussion with Executive Committee

Anna-Maria Arabia hosted an open panel discussion with Professor Ian Chubb and Professor Frances Separovic.

Discussion on ARC matters

Professor Steven Weller and Professor Gavin Reid from the Australian Research Council (ARC) presented on the ARC's current priorities, including the review of the ARC Act.

Workshop: 2024 Decadal plan for Australian science

In 2024, the Academy is launching an ambitious project to establish a Decadal Plan for Australian Science. This plan will aim to establish a clear strategic direction for science policy and implementation in Australia, outline the crucial linkages between science and Australia's national priorities and make a compelling case for investing in critical science infrastructure and capabilities. The National Committee Chairs participated in a workshop aimed at developing the consultation process, scope and focus areas for this decadal plan.

Context: Academy strategic review and implementation overview

Anna-Maria Arabia Chief Executive

Australian Academy of Science Strategic Review

- An overview of the Academy's strategic review, which was conducted from April 2022 to March 2023, was presented.
- The objective of this review was to explore how the Academy can continue to amplify its impact and promote public good against the backdrop of significant domestic and international change.
- Strengthening the advocacy and advisory role the Academy plays in brokering knowledge and impartial scientific advice is critical.

Consultation process:

- The review was led by Dr Adi Paterson, Mr Philip Marcus Clarke, Ms Patricia Kelly and Ms Anne-Marie Lansdown, in collaboration with the Academy's Executive Committee.
- Approximately 70 one-on-one interviews were conducted with key stakeholders, encompassing politicians, science sector organisations, government officials, state Chief Scientists, EMCRs, Academy staff and international learned academies.
- National Committees were invited to contribute at various points throughout the process.
- Strategic engagement was carried out with key stakeholders, including government decision-makers, members of the philanthropic community and other science sector organisations.

Findings and opportunities:

The review identified three overarching areas of opportunity for amplifying the Academy's impact, including:

- 1. Science leadership: the Academy must continue to focus its efforts on providing evidence-based science policy advice to key decision-makers.
- 2. Strategic engagement: The Academy must continue to foster strong relationships with its key stakeholders, including the other learned Academies. Amplifying the voices of Fellows, National Committees, and EMCRs throughout the Academy's work must continue to be a key focus area.
- 3. Mobilising and transforming the Academy: Measures were taken to ensure effective governance, utilise Fellowship and National Committees' knowledge, and address diversity challenges in the nomination and election process.

Agility and strategic resource allocation will be vital to the process of implementing the review's findings.

Implementation:

Key measures to support the implementation of the findings of the Academy's Strategic Review have already commenced. This includes, but is not limited to:

- Organisational restructuring: Since 1954, the National Committees have been governed by the Secretaries for Physical and Biological Sciences. The Academy's Secretariat has been restructured so that the National Committees now fall under the remit of the Foreign Secretary and Secretary Science Policy.
- Philanthropy and capability building: The Academy is cultivating broader relationships with its philanthropic community to assist with long-term capability-building initiatives.
- Revisiting strategic priorities: The Academy will be working to establish a Decadal Plan for Australian Science in 2024. Through hosting the International Science Council's Regional Focal Point for Asia and the Pacific, the Academy is also working to amplify voices from the Asia and Pacific region within global science.
- Archives and Collections: Archives are being leveraged for future insights, focusing on the digitisation of archives for accessibility and preservation.
- STEM Education: The role of the Academy in STEM education was assessed, with a particular focus on professional learning for teachers. The feasibility of continuing the Academy's work in this space without government funding was reviewed.

Questions and answers

Q: What is the Academy's position on engagement with Indigenous stakeholders?

A: The Academy and the Australian Academy of Technology and Engineering (ATSE) are collaborating to develop an expert working group. The group aims to produce practical guidance to the sector on how to engage with Indigenous communities meaningfully and appropriately. This working group is focused on how best to integrate traditional knowledge in a manner that reduces the cultural burden.

Q: Could you provide feedback on the Academy's meeting with the Treasurer?

A: The Academy is confident that the issue of a highly fragmented research funding landscape is well understood, and that efforts to coordinate this funding more effectively are underway.

Review of National Committees 2023/24

Professor Steven Chown FAA Chair, 2023/24 National Committee review panel

- Professor Chown provided an update on the Review of the National Committees.
- The review panel is led by Professor Steven Chown FAA (Chair), Professor Halina Rubinsztein-Dunlop FAA, and Professor Fred Menk.
- The last review of the National Committees was the 2012/13 McKellar Review. The recommendations of this review informed the structure and the terms of reference of the present-day committees.
- The science landscape was recognised as evolving, prompting the need to reallocate discipline coverage. Strategic considerations of the current review include ensuring flexibility to adapt to scientific advancements, as well as enhancing the role of National Committees in providing evidence-based advice to inform science policy and policy for science.
- The results of this review are expected to be presented to the Academy's Executive Committee in March 2024.

8

Update on international policy and diplomacy context

Nancy Pritchard

Director, International Programs and National Committees

The Academy has played a vital role in promoting international scientific engagement and fostering a strong presence of Australian scientists globally. Since its establishment in 1954, the Academy has facilitated Australia's representation on the ISC, including its 45 international unions and interdisciplinary bodies.

Achievements and nominations:

- Notable achievements include supporting nominations to enhance Australian representation internationally.
- Successful elections took place, resulting in Professor Mary Garson being elected as Vice President of the International Union of Pure and Applied Chemistry, and Dr. Andrew Young joining the CODATA Executive Committee.
- Earlier this year, Professors Frank Dunshea, Caryl Nowson, and Andrew Sinclair were awarded International Union of Nutritional Sciences Fellowships, and Dr Welma Stonehouse was appointed Treasurer of the International Union of Nutritional Sciences (IUNS).

Connectivity and inclusivity:

- The Academy has prioritised enhancing connectivity, diversity, and inclusivity in its international engagement strategy.
- Support was provided to delegates attending overseas events relevant to their disciplines.
- The Academy's efforts towards greater connectivity and inclusivity have included facilitating the participation of EMCRs to participate in Lindau Nobel Laureate meetings, Falling Walls Labs in Berlin, and short-term visits for Ukrainian researchers through the Ukraine-Australia Research Fund in partnership with the Breakthrough Prize Foundation.

Global forums and initiatives:

- The critical role of the Academy, its Fellows, and National Committee members in global science and technology forums, science policy initiatives, and strategic partnerships was emphasised.
- The Academy is providing ongoing support for bids to host key global disciplinary events, including the 38th International Geographical Union General Assembly in 2028 and the International Congress of Nutrition in 2029.



Update on ISC Regional Focal Point for Asia and the Pacific

Dr Petra Lundgren

Director, ISC Regional Focal Point for Asia and the Pacific

- The International Science Council's (ISC) primary mission is to advance science as a global public good by supporting and coordinating science expertise across multilateral platforms.
- The Academy has successfully secured the opportunity to host the ISC Regional Focal Point (RFP) for Asia and the Pacific. The primary objectives of the ISC RFP are to advocate for voices from the Asia-Pacific region on global science platforms and to foster trust in science within the Asia-Pacific region.
- The Australian Government will be providing \$10 million to support this initiative from 2023-2028.
- The ISC RFP will be focused on the South Asia, East Asia, Southeast Asia, and Oceania sub-regions.
- Three pillars will guide operations: knowledge generation, capacity building, and science communication and translation.
- Inclusivity, accessibility, and equity have been established as the guiding principles for all the RFP's endeavors.
- The ISC RFP will predominantly collaborate with and support existing programs, rather than offer standalone grants.
- The Academy will be working to promote Australian scientists and their expertise as key collaborators in advancing science in the Asia-Pacific region.

Asia-Pacific Global Knowledge Dialogue, Kuala Lumpur:

- The Asia-Pacific Global Knowledge Dialogue was held in Kuala Lumpur on 6 October 2023.
- The dialogue was focused on developing new tools and ways of doing science in a 'post-normal' world. The importance of capacity building to promote evidence-based decision-making in the region was emphasised, along with the importance of supporting EMCRs in the region.

Pacific Academy of Science and Humanities:

- At a meeting on 24-25 October 2023 in Apia, Samoa, the landmark decision to establish a Pacific Academy for Science and Humanities was made. This Academy is anticipated to be established by October 2024.
- The Pacific Academy will be focused on shifting away from imported knowledge within the region and fostering the co-creation of local knowledge. The Academy will also work to amplify the voices of Pacific scientists within the IPCC reporting framework.
- The objective of the Pacific Academy is to be "By and for the Pacific," seeking to harness the unique voices, knowledge, regional, and cultural insights of Pacific scientists and Indigenous communities.
- The governance structure is led by the Academy's Executive Committee, ISC Regional Focal Point Asia-Pacific Advisory Council, and ISC Board. The Co-Chairs are Professor Chennupati Jagadish and Professor Karina Batthyany.

National Committees can get involved in the ISC RFP by:

- Sharing their regional initiatives, opportunities, and successes by contacting the ISC RFP office at isc-ap@science.org.au
- Subscribing to council.science/Asia-Pacific to receive updates via their newsletters

Questions and answers

Q: Why do you think there has been decreasing trust in science? What is the Academy's role in addressing this?

A: Misinformation is driving confusion amongst the public. Science needs to be made more accessible to the general public. It should be noted that the framing of questions around trust in science is also a key determinant in the level of trust reported by the public.

Domestic policy overview

Chris Anderson Director Science Policy

- Apologies were noted for Professor Ian Chubb, Secretary Science Policy.
- As a result of increased economic, social, and political volatility worldwide, trust in science has fallen and is becoming increasingly partisan. Reversing this trend is a critical challenge.
- In the domestic political arena, environment, health, education and defence have been identified as priority areas where money, funders and policy levers are most easily accessible. Science has not traditionally been one of these priority areas.
- In 2024, the 70th anniversary of the formation of the Australian Academy of Science, the primary science policy goal will be to develop a Decadal Plan for Australian Science. This plan will be focused on demonstrating how science can assist in mobilising resources and capabilities towards Australia's national priorities.
- Updates on upcoming policy activities and priority areas were discussed, including:
 - The 2023 Academy Symposium on international scientific collaborations in a contested world;
 - o Upcoming March 2024 Symposium on food security;
 - November 2023 roundtables on future nuclear science research capabilities and computing needs;
 - Possible Linkage Learned Academies Special Projects (LASP) funding opportunities;
 - o Continued discussions on efforts to preserve research integrity;
 - o The potential for an Australian Parliamentary Science Office;
 - Inviting the National Committee Chairs to contact the Science Policy team to discuss topics and issues they are interested in, or want the Academy to take an interest in.

Questions and answers

Q: How does the Academy balance presenting evidence dispassionately whilst also providing advice to decision-makers?

A: The Academy approaches this challenge issue-by-issue and understands that its authority and its trustworthiness in the eyes of decision-makers is derived from its ability to express the evidence provided by its Fellows, National Committees and other key stakeholders. It was noted that policy advice is not always politically convenient.



Panel discussion with Executive Committee

Anna-Maria Arabia Chief EXecutive

Professor Ian Chubb AC FAA FTSE Secretary Science Policy

Professor Frances Separovic AO FAA Foreign Secretary

Professor Malcolm Sambridge was noted as an apology for the panel discussion.

In their opening remarks, Professor Ian Chubb and Professor Frances Separovic shared that the Academy is becoming increasingly proactive in anticipating science policy challenges and continues to gain recognition as a trusted scientific body nationally and internationally. Key improvements are also in progress, particularly following the Academy's Strategic Review. Increasing trust and investment in fundamental science continues to be a challenge, for both the Academy and the broader scientific community.

Questions and answers

Q: What is the Academy's role in boosting trust in science? How do we ensure the public and government see the Academy as the trusted voice of science?

A: Professor Ian Chubb recognised this is an ongoing struggle, as often Australians only seem to seek science when it is urgently needed (for example, during the COVID-19 pandemic). The Academy recognises that increasing community buy-in and scientific interest is critical and continues to expand its community engagement efforts.

Anna-Maria Arabia mentioned that the Academy releases resources on their website to help support public understanding. These can be circulated to the Chairs.

Professor Frances Separovic noted that many countries use the Sustainable Development Goals (SDGs) to support efforts to increase public understanding of science, at both national and global scales. Australia does not seem to engage with the SDGs for this purpose.

Q: How can the Academy help close the gap between growing inequity in science?

A: Professor Ian Chubb discussed how elitism and expertise are vastly different, and that scientists are not 'elite'. The importance of education was emphasised and is crucial to closing the gap.

Q: Does the Academy balance bias in their publications? Particularly regarding climate change?

A: Anna-Maria Arabia commented that 'the risks to Australia of a 3°C warmer world' publication by the Academy offers variety of opinions, but is focused on mitigating climate change. The Academy attempts to utilise their National Committees and their Fellows to aid in ensuring publications are representative of science.

Professor Ian Chubb stated that despite attempts at mitigating atmospheric carbon emissions, it is still a large problem and therefore, alleviating it is often the topic of



publications. Reports tend to assess the downside of climate change as it is a pressing issue, and there are not many positive aspects.

Q: How does the Academy engage with non-science institutions, particularly at a local government scale?

A: Professor Ian Chubb commented that the Academy is working on a strategy for this, and that current engagement could be better. Scientists out of university are struggling to get jobs directly involving science, so tackling this issue is important. Engaging with ministers is vital, and practicing the mantra 'passion, patience, persistence' helps when trying to engage with them.

Decadal plan for Australian science workshop

Lead: Dr Hayley Teasdale Manager, Science Policy Projects

- The Academy is in the process of planning the development of a Decadal Plan for Australian Science. Anticipated launch date is November 2024.
- The Decadal Plan will be based on the National Science and Research Priorities. Each of the priority areas will be assigned a working group, which will be responsible for developing a roadmap.
- Chapters on common barriers and enablers will also be included in the plan.
- Expert working groups will comprise of 2-3 National Committee Chairs, two industry representatives and two current or former public servants in relevant areas.
- National Committee Chairs were surveyed for their initial responses to the Decadal Plan for Science:
 - The main challenges National Committees face include funding, disillusionment of the academic workforce, access to world-class facilities, lack of cultural diversity, lack of a fully engaged disciplinary network, and a lack of an overarching strategy to advance disciplinary objectives.
 - These challenges could be addressed by raising the profile of the National Committees, increasing the Academy's advocacy for the importance of fundamental research, increasing resources available to the National Committees, increased advocacy for tertiary funding model reform, and continuing to create networking opportunities.
 - Potential of the Decadal Plan to support National Committee priorities: encouraging large-scale, coordinated national science programs, identifying common priorities between disciplines, advocacy for secure infrastructure and facilities and establishing a clear definition of science for policymakers.
 - Potential challenges of a Decadal Plan: reducing confusion relating to a number of different decadal plans, alignment with international goals, not adding significant additional workload to the National Committees, and ensuring that the Decadal Plan clearly defines what science is.
- National Committee Chairs formed three groups to discuss the proposed strategy for developing the Decadal Plan.
- The Academy will continue to consult with the National Committees throughout 2024.



2023 National Committees for Science | year in review

This section summarises the key activities of each of the National Committees for Science throughout 2023.

National Committee for Agriculture, Fisheries and Food	
Chair	Professor Peter Langridge FAA
Meetings	8 virtual meetings (1 upcoming).
2023 key activities	 NCAFF has focused on re-assessing which recommendations of <u>Grow. Make.</u> <u>Prosper. The decadal plan for Australian Agricultural Sciences (2017-2026)</u> can be progressed prior to the end of the plan's strategic period. Focused on building capacity to establish a national agricultural research translation and commercialisation fund. This aligns with Recommendation 1 of the Decadal Plan. Presently exploring the possibility of hosting a forum at EvokeAg 2024.
Challenges	 Very broad research area. Target audience of the Decadal Plan could be more strongly defined. The Decadal Plan focuses strongly on agriculture, with limited mention of food and fisheries.
Submissions and publications	 <u>Australia's science and research priorities</u> <u>National Robotics Strategy</u>
International associations	 International Union for Biological Sciences (IUBS) International Union of Food Science and Technology

National Committee for Antarctic Research	
Chair	Professor Nerilie Abram
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Continued collaboration with the Australian Antarctic Division (AAD) to develop the Australian Antarctic Decadal Plan. Continued advocacy for coordinated, ambitious and well-funded Antarctic research.
Challenges	 Lack of clarity around what the Antarctic science funding landscape will look like in the coming years as major research centres reach the end of their current funding. Maintaining leadership within the Scientific Committee on Antarctic Research (SCAR). The complexity of early career opportunities in science areas requiring Antarctic fieldwork.
Submissions and publications	 <u>Draft National Science and Research Priorities</u> <u>Inquiry into Australian Antarctic Division Funding</u>

International	 Scientific Committee on Antarctic Research (SCAR). Association of Polar Early Career Scientists (APECS). Pure Antarctic. International Partnerships in Ice Core Sciences (IPICS), part of Past Global
associations	Changes (PAGES). Intergovernmental Panel on Climate Change (IPCC).

National Committee for Astronomy	
Chair	Professor Virginia Kilborn
Meetings	2 virtual meetings and 1 in-person meeting (upcoming)
2023 key activities	 Strong focus on the development of the <u>Decadal plan for Australian</u> <u>Astronomy (2026-2035)</u>, including extensive and ongoing engagement with the Australian astronomy community to facilitate this. Continued to provide strategic science policy advice to the Academy, as input to Academy science policy statements. Continued to foster strong connections with the International Astronomical Union (IAU).
Challenges	 Ensuring sufficient funding and support for fundamental science. Securing funding for European Southern Observatory partnership, to ensure Australia stays at the forefront of astronomy.
Submissions and publications	Draft National Science and Research Priorities
International associations	International Astronomical Union (IAU).

National Committee for Biomedical Sciences	
Chair	Professor Philip Poronnik
Meetings	0 meetings.
2023 key activities	 The Chair to attend a House of Representatives Inquiry into the use of generative artificial intelligence in the Australian education system. Publication of <u>Bioscience 2030: a report on lessons learned and future trends for bioscience tertiary educators post-COVID</u>
Challenges	 Diverse disciplinary environment. Links to international unions primarily occur through individual national societies, as opposed to the NCBMS. Substantial crossover with the Medicine and Public Health and Cell and Developmental Biology Committees.
Submissions and publications	Bioscience 2030: a report on lessons learned and future trends for bioscience tertiary educators post-COVID
International associations	 International Union of Immunological Societies (IUIS). International Union of Biochemistry and Molecular Biology (IUBMB). International Union of Toxicology (IUTOX). International Union of Basic and Clinical Pharmacology (IUPHAR).

- International Union of Microbiological Societies (IUMS).
- International Union for Pure and Applied Biophysics (IUPAB).
 - International Union of Physiological Sciences (IUPS).

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National Committee for Brain and Mind	
Chair	Professor Jason Mattingley
Meetings	0 meetings
2023 key activities	 Provided strategic science policy advice to the Academy, as input to Academy science policy statements. Ongoing support for the work of the Australian Brain Alliance.
Challenges	 NCMB has undergone significant changes to its membership, including some members reaching the end of their terms and some members no longer representing external organisations in an ex-officio capacity. Only two Fellows of the Academy represent the discipline of psychology, which limits the capacity for meaningful interactions between the NCBM and the Academy.
Submissions and publications	Australia's Science and Research Priorities: Conversation Starter.
International associations	This National Committee currently has no active links with international organisations.

National Committee for Cellular and Developmental Biology	
Chair	N/A
Meetings	0 meetings
Comments	Currently there are no active committee members. The NCCDB is presently under review.

National Committee for Chemistry	
Chair	Professor Katrina Jolliffe FAA
Meetings	3 virtual meetings (including 1 upcoming).
2023 key activities	 Continued to support strong relationships between the Australian chemistry community and the International Union for Pure and Applied Chemistry (IUPAC). This has included supporting Emerita Professor Mary Garson in her election to the role of IUPAC Vice President. Reviewed the Decadal Plan, <u>Chemistry for a better life: The decadal plan for Australian chemistry 2016-2025</u>, and its challenges to begin planning for future Decadal Plans.
Challenges	 The mid-term review of the Decadal Plan was delayed as a result of COVID-19 and is now viewed as too close to the end of the Decadal Plan to take place. Loss of 'corporate knowledge' across the pandemic, combined with a new Chair and changes in Academy staff, impacted the NCC's understanding of its role.

NATIONAL COMMITTEES FOR SCIENCE 2023 annual meeting proceedings

	 Committee links to Chemistry Australia (the primary industry body) are no longer active and have been difficult to renew. 	
Submissions and	Draft National Science and Research Priorities	
nublications	 <u>National Robotics Strategy</u> 	
	 Discussion paper <u>Accessing Australia's Research Collections</u> consultation. 	
	International Union of Pure and Applied Chemistry (IUPAC).	
International	 International Young Chemists Network. 	
associations	Royal Society of Chemistry.	/ 🖌
	American Chemical Society.	

National Committee for Crystallography	
Chair	Professor Michael Parker FAA
Meetings	1 virtual meeting and 1 ad hoc meeting at the annual Society of Crystallographers in Australia and New Zealand (SCANZ) conference.
2023 key activities	 Supported the strengthening of relationships between the Australian crystallography community and the International Union of Crystallography (IUCr). This included the fulfilment of a successful bid from 2017 to host the <u>26th IUCr Conference and General Assembly</u> in August 2023. Continued to foster a close relationship between the NCCr and SCANZ through the Chair's presence at SCANZ Council meetings. No decadal plan relevant to crystallography. Incorporating other structural sciences (e.g. cryoEM) into the crystallography
Challenges	 discipline. Major national facilities are not currently providing sufficient support to the crystallography discipline.
Submissions	N/A
International associations	 International Union of Crystallography (IUCr). Asian Crystallographic Association (AsCA). Asia Pacific Microscopy Society. Asia-Oceania Neutron Scattering Association (AONSA). Asia-Oceania Forum for Synchrotron Radiation Research (AOFSRR).

National Committee for Data in Science	
Chair	Dr Adrian Burton
Meetings	1 virtual meeting, 1 in-person meeting.
2023 key activities	 Continued to function as the CODATA Australia National Committee. Hosted a Symposium at the Shine Dome, 'Data for the People: Open Science meets Digital Government to Address Grand Challenges,' in conjunction with the ARDC. This Symposium featured an international perspective from Simon Hodson of the ISC's Committee on Data in Science (CODATA), researcher perspectives and Australian Government perspectives. Continued to link the Academy to Australian initiatives improving the usage of data in science. Continued to foster strong relationships between other Australian Academies, AAHMS, ATSE and ASSA.
Challenges	 The breadth of the NCDiS agenda. The discipline focus of the NC system can make engaging with cross- disciplinary societal challenges difficult. Confusion around the scope of the term, 'data in science.'

Submissions and publications	Draft National Science and Research Priorities	
International associations	 Committee on Data (CODATA). ISC World Data System (WDS). Research Data Alliance (RDA). 	

National Committee for Earth Sciences	
Chair	Emeritus Professor Ian Jackson
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Continued to implement the <u>Decadal Plan, Our Planet, Australia's Future: A</u> <u>Decade of Transition in Geoscience 2018-2027</u>. The NCES Chair organised a meeting of the Heads of Geosciences Departments at the Australian Earth Sciences Convention in June 2023. Presently conducting a consultation with the Heads of Geoscience Departments Australia-wide to address existing funding and resourcing challenges. Exploring the possibility of a public relations campaign in conjunction with the Australian Geosciences Council concerning the importance of geosciences in Australia's future.
Challenges	 The parlous state of Australian tertiary training in geoscience which is exacerbated by funding cuts, limited resources, and fluctuating enrolment numbers.
Submissions and publications	Draft National Science and Research Priorities
International associations	 International Union for Quaternary Research (INQUA). International Union for Geodesy and Geophysics (IUGG). International Union for Geological Sciences (IUGS).

National Committee for Earth System Science		
Chair	Professor Andy Pitman FAA	
Meetings	1 virtual meeting (upcoming)	
2023 key activities	 Commenced the process of preparing a new 10-year strategic plan for Australian climate model predictions. Continued to provide the Academy with advice and commentary where required. Continued strong association with Future Earth Australia. 	
Challenges	 Breadth of the Earth System Science discipline. NCESS membership has historically struggled to appropriately reflect an expanded vision of Earth System Science as a discipline without the necessary expertise in social sciences, human geography, and economics. 	
Submissions and publications	Draft National Science and Research Priorities	
International associations	 Scientific Committee on Oceanic Research (SCOR). World Climate Research Programme (WCRP). International Geosphere-Biosphere Project (IGBP). International Human Dimensions Programme on Global Environmental Change (IHDP). 	

Chair	Professor Alan Andersen FAA
Meetings	2 virtual meetings (1 upcoming)
2023 key activities	 Continued to provide strategic science policy advice to the Academy. Currently finalising and ECMR paper on evolutionary science.
Challenges	 Short turnaround time for policy input. Limited engagement from Committee members.
Submissions and publications	 <u>Draft National Science and Research Priorities</u> Nature Repair Market Senate Inquiry, May 2023. Nature Repair Market exposure draft, February 2023.
International associations	 International Union of Biological Sciences (IUBS). INTECOL. Society for Conservation Biology. Society of Vertebrate Palaeontology. Society for the Study of Evolution.

National Committee for Geographical Sciences	
Chair	Emeritus Professor Iain Hay
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Continued to pursue the recommendations of the Decadal Plan, <u>Geography:</u> <u>Shaping Australia's Future (2019)</u>. Continued strong engagement with the IGU Executive. Fostered ongoing collaboration with national and international geographical societies through their representation on the NCGS. Continued advocacy for stronger associations with the Academy of Social Sciences in Australia.
Challenges	 Encouraging sufficient buy-in from geographical organisations to implement the Decadal Plan. Some disconnect between NCGS member interests and the science policy advice requested by the Academy. Lack of opportunities to meet face-to-face and better develop the NCGS network.
Submissions and publications	N/A
International associations	International Geographical Union (IGU).

National Committee for History and Philosophy of Science		
Chair	Dr Rachael Brown	
Meetings	3 virtual meetings.	
2023 key activities	• Consistently provided strategic science policy advice to the Academy and input into science policy statements throughout 2023. This included Academy input to S20 Meeting on Connecting Science to Society and Culture (June 2023).	

	 Published three editions of the NCHPS newsletter to an audience of over 360+ subscribers. Attracted four new committee members, including two ECBs. 	
	 Continued to support the EMCR community within the HPS discipline. Advised the Sci Launched the Mike Smith Student Prize for 2023-24. 	
Challenges	 Ongoing challenges related to the financial impact of the COVID-19 pandemic increasing the workload of committee members. Short response timeframes for science policy submissions. 	
Submissions and publications	 Participation in Neurotechnology and Human Rights Consultation, Human Rights Commission, May 2023. Academy <u>Statement on Freedom and Responsibility of Science</u>, August 2023. Draft National Science and Research Priorities 	
International associations	 International Union for History and Philosophy of Science and Technology (IUHPST). 	

National Committee for Information and Communication Sciences		
Chair	Professor Ampalavanapillai Nirmalathas	
Meetings	4 virtual meetings (1 upcoming).	
2023 key activities	 Continued to pursue the implementation of the Decadal Plan, <u>Preparing for</u> <u>Australia's digital future: A strategic plan for information and communication</u> <u>science, engineering and technology (2019).</u> Provided strategic science policy advice to the Academy and input into science policy statements. Fostered closer collaboration with the NCDiS. Promoted Australia's Digital Future initiative, including through NCICS/ATSE webinars. Continued to work in collaboration with the Australian Academy of Technological Sciences and Engineering (ATSE). 	
Challenges	 Breadth of the discipline. Competition with the other NCs over resources of Academy Secretariat. Establishing an award to celebrate significant ICS contributions. Ensuring the NCICS meets on a regular basis. 	
Submissions and publications	Draft National Science and Research Priorities	
International associations	This National Committee currently has no active links with international organisations.	

National Committee for Materials Science and Engineering	
Chair	Professor Lianzhou Wang
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Provided strategic science policy advice for Academy submissions. Continued to foster strong connections between the Australian MSE community and the International Union of Materials Research Societies.

	 Promoted stronger communication channels and interconnectivity amongst the Australian MSE community. This includes NCMSE working with the Australian Materials Research Society (AMRS) to build a MSE mailing list. 	1
Challenges	 An absence of a single professional institution representing MSE in Australia. Highly interdisciplinary nature of MSE. 	
Submissions and publications	 <u>National Critical Mineral Strategy Discussion Paper</u> <u>National Robotics Strategy</u> <u>Draft National Science and Research Priorities</u> 	*
International associations	 International Union of Materials Research Societies (IUMRS). 	

National Committee for Mathematical Sciences	
Chair	Professor Adrian Baddeley
Meetings	2 virtual meetings
2023 key activities	 Continued pursuit of the recommendations of the Decadal Plan, <u>Decadal plan</u> for the mathematical sciences (2016-2025), following the <u>mid-term review</u> of the Decadal Plan in 2022. Nurtured ongoing collaboration between key Australian mathematics societies through their representation on the committee. Increased focus on strategic planning for upcoming mathematics conferences, both in Australia and internationally. Promoted national mathematics activities including the mathematics theme for National Science Week, International Mathematics Olympiad and the International Conference on Mathematics Education.
Challenges	 The NCMS has a strong interest in mathematics teaching and should be consulted when science policy matters concerning teaching and mathematics curricula arise. Raising and communicating concerns about government policy through the Academy.
Submissions and publications	Draft National Science and Research Priorities
International associations	 International Mathematical Union (IMU). International Commission on Mathematical Instruction (ICMI). International Council for Industrial and Applied Mathematics (ICIAM). Institute of Mathematical Statistics (IMS).

National Committee for Mechanical and Engineering Sciences

Chair	N/A
Meetings	0 meetings.
Comments	The NCMES has no active members and is currently considered inactive. The NCMES is presently under review.

National Committee for Medicine and Public Health	
Chair	Professor John Mattick FAA
Meetings	0 meetings.
Comments	Currently there are no active committee members. Professor John Mattick has been newly appointed to the Chair role in October 2023.

National Committee for Nutrition	
Chair	Professor Helen Truby
Meetings	2 virtual meetings and 1 in-person meeting (upcoming).
2023 key activities	 Continued to implement the Decadal Plan, <u>Nourishing Australia: a decadal plan for the science of nutrition (2019).</u> Conducted extensive engagement with the Australian nutrition community to support connection and collaboration to build an Implementation Committee for the Decadal Plan. Hosted the <u>Theo Murphy Symposium</u> (July 2023). Formed the Theo Murphy Think Tank to bring together 50+ EMCRs to take ownership of the Decadal Plan and its goals. Supported cross-committee engagement with NCAFF. NCN is to host the <u>2023 Boden Research Conference: Advancing the Science of Precision and Personalised Nutrition</u> on 20 October 2023.
Challenges	Improving international engagement.
Submissions and publications	• N/A
International associations	 International Union of Nutritional Sciences (IUNS). Federation of Oceanic Nutrition Societies (FONS).

National Committee for Physics	
Chair	Professor Halina Rubinsztein-Dunlop / Dr Margaret Wegener
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Advised on the <u>the Geoffrey Frew Fellowship</u>. Finalised an internal review of <u>Physics decadal plan 2012–2021: building on excellence in physics</u>. Continued to foster stronger ties with the International Union of Pure and Applied Physics (IUPAP) in the Pacific region. NCP continues to explore the need for a new decadal plan for physics. <u>ANZCOP-AIP Summer Meeting 2023: Research School of Physics, The Australian National University</u> Dec 3-8, 2023. Engaged in consultations for the National Quantum Collaboration Initiative.
Challenges	 Securing funding for the next Decadal Plan. Extending the activities of the NCP to provide policy advice more actively. Establishing strong, active networks with relevant Government departments.
Submissions and publications	Draft National Science and Research Priorities

- International Union of Pure and Applied Physics (IUPAP). •
 - International Commission for Optics (ICO).

National Committee for Space and Radio Science	
Chair	Professor Phil Bland
Meetings	2 virtual meetings (1 upcoming).
2023 key activities	 Publication of three editions of the Space and Radio Science Newsletter. Advocated to raise political awareness of the challenges of the Australian Space Agency excluding space science from its remit. Appointed two international observers from NASA to provide an international perspective to the committee. NCSRS is currently working on the development of an Implementation Plan in support of its Decadal Plan, <u>Australia's Future in Space: a strategic plan for space science</u>. Worked with the Academy to respond to the cancellation of the National Space Mission for Earth Observation (NSMEO). <u>Australian Space Research Conference: Broaden Our Horizons: Hobart,</u> September 25 - 27, 2023.
Challenges	 Key actors in the Australian space community explicitly exclude space science and space craft engineering from their remit. Assumptions from some ARC panels that funding for space science and engineering is readily available from other stakeholders. Funding cuts to the Australian Space Agency budget and the decision to axe the NSMEO.
Submissions and publications	 Draft National Science and Research Priorities National Robotics Strategy
International associations	 Committee on Space Research (COSPAR). Scientific Committee on Solar-Terrestrial Physics (SCOSTEP). International Union of Radio Science (URSI).

Future Earth Australia	
Chair	Co-chairs Professor Wendy Steele and Jemma Purandare
Meetings	2x virtual meetings, 1 in-person (hybrid) meeting in November.
Key 2023 activities	 Expansion of FEA's Early Career Network programs: Urban Early Career Network Co-Lab, Just Adaptation Co-Lab. Opportunities Fund: Bursaries and Grants awarded to early career researchers and professionals. FEA Session at Adaptation Futures (Montreal) and Transformations 2023 (Sydney). Consultation on update to FEA's Sustainable Cities and Regions Strategy.
Challenges	 Change management: Rotation of Committee members. Reduced Secretariat capacity. Redefining purpose and priorities of FEA within this context of change.
Submissions and publications	 <u>Early Career Urban Research Working Group: Update to the Sustainable</u> <u>Cities and Regions Strategy.</u> Draft National Science and Research Priorities.

	 Provided advice into Academy submissions: NSW Climate Change (Net Zero Future) Bill 2023 submission; Setting, tracking, and achieving Australia's emissions reduction targets submission; House Inquiry into plastic pollution in Australia's oceans and waterways. Provided direct advice to: National Health and Climate Strategy, National Climate Risk Assessment Methodology, Australia's Sustainable Oceans Plan, and Decadal Plan for Social Science Research Infrastructure 2023-32. 	
International associations & contributions	 Formed and maintained connections with Future Earth Canada and Future Earth USA. Adaptation Futures 2023 chairing session on establishing a globally relevant just adaptation network. Forming connection with the Royal Society of Canada and maintaining relationships on behalf of the Australian Academy of Science. Engagement with Future Earth Asia Regional Committee. Increased engagement with International Science Council and the Regional Focal Point for Asia and the Pacific. Member of the Future Earth Coasts Working Group on Just Transitions. 	