

EMERITUS

The Australian National University Emeritus Faculty e-magazine

Universities welcome budget but call for more R&D funding

Tertiary-education peak bodies have welcomed the thrust of the 2023-24 federal budget and the funding promised for more university places, but have called for more support to be given to research.

Universities Australia was pleased with the support to be given to students facing cost-of-living pressures, while the Group of Eight (Go8) pointed to the need for future funding to support Australia's high-technology defence capabilities. While recognising that the government had needed to balance other budgetary demands, both organisations looked to the forthcoming University Accord to deliver further improvements in the sector.

The focus was now on the Accord process and future budgets to provide reforms to correct the 'current distorted research funding model', Go8 Chief Executive Vicki Thomson said, and to lift Australia's research and development expenditure from the present 1.8 per cent of GDP to at least 2.7 per cent, the OECD average.

The budget 'recognises that a highly skilled workforce is critical for Australia's future, and new funding for 4000 additional university places over the next four years in STEM disciplines will help generate that workforce; especially, to support Defence priorities,' Ms Thomson said.

'While the Group of Eight (Go8) very much welcomes these additional places, there is some concern that the vast research capability which is equally as critical to AUKUS Pillar 2 was not considered a priority worth inclusion. Ensuring Australian students retain the ability to attend a world-class university gets a big tick, but there are definitely two aspects to our future defence capability, with research hand in hand with that highly skilled workforce with world-class university training,' she said.

The Go8 endorsed additional 'small but important funding initiatives to support equity in higher education', including an additional \$4.3 million annually for the Higher Education Disability Support Program and the two-year extension of the Women in STEM Cadetships and Advanced Apprenticeships program.

The Go8 also endorsed the government's commitment in other areas of public expenditure, among them the creation of an additional 320 medical places and 500 additional postgraduate psychology places that would help to support Australia's growing health needs.

‘The Go8’s commitment to the nation is to do everything we possibly can, especially for the defence future where we are at the front line of research capability,’ Ms Thomson said. ‘As the Go8 undertakes 70 per cent of all university research, we will continue to work with the government to ensure Australia’s required sovereign capability can be realised and on time—including the AUKUS Pillar 2 advanced capabilities that can only come through research and development.’

In a budget that struck a balance between cost-of-living relief and fiscal repair, increasing Youth Allowance, Austudy, ABSTUDY and other income support payments were particularly welcome for students struggling with financial pressures, Universities Australia’s Chief Executive, Catriona Jackson, said.

‘We have called on government to ensure university students are included in any cost-of-living support packages and are pleased they have taken this step,’ she said.

‘At the same time, government remains focused on returning the budget to a position of strength. Boosting productivity is essential in the face of forecast medium-to-long-term economic challenges.

‘We are a good return on investment’

‘Universities are key economic drivers, through the provision of skilled workers and new ideas, research and development, and have a vital role to play. Every dollar spent on research returns \$5 to the economy, and university-educated workers make the economy \$185 billion bigger.’

Universities needed the full support of government to continue their vital national work as demand for university-educated workers and research and development increased, she said.

Funding for new university places and additional clinical placements to educate highly skilled workers was ‘a good start’, but greater support for universities would make the task of building a better economic future for all Australians easier, Ms Jackson said: ‘We are a good return on investment, and we drive the productivity the economy so desperately needs.’

‘We need more skilled workers and more research and development, not less, but we can’t do it without more investment from government.

‘We are working with government through the Universities Accord to get the policy and funding settings right for universities and the communities we serve and hope this paves the way for changes in the next federal budget,’ she said.

Universities Australia noted in particular the health-related components of the budget, including \$91.3 million for additional psychology placements, including 500 psychology postgraduate placements, 500 one-year internships, and 2,000 supervisor training sessions; \$50.2 million to establish the Primary Care and Midwifery Scholarships program; \$31.6 million to trial enhanced training arrangements to support international medical students in rural and remote locations; \$10.7 million to boost the primary care nursing workforce by creating 6,000 primary care clinical placements and related incentives; and \$4.2 million for James Cook University to deliver the Australian General Practice Training program.

Climate-change research warns of more damaging El Niño events

Analysis conducted by two Australian scientists over five years has discovered a relationship between human-caused greenhouse-gas activity and changes to the El Niño and La Niña weather patterns, and will help us understand how these weather patterns will change as the world warms.

Human-caused greenhouse-gas emissions mean that strong El Niño and La Niña events are occurring more often, Wenju Cai and Agus Santoso wrote in an article published in *The Conversation* on 18 May.

Cai, Chief Research Scientist, Oceans and Atmosphere with the CSIRO, and Santoso, a Senior Research Associate at the University of NSW, warn that as climate change worsens, the world must prepare for many more potentially damaging climate events.

The authors set out to examine the link between human-caused climate change and the El Niño and La Niña events that had puzzled scientists for three decades. Climate scientists had long observed a correlation between the effects of climate change impacts on the oceans and atmosphere, and the increase in greenhouse-gas emissions. Cai and Santoso examined when this activity may have started to make El Niño and La Niña events more extreme.

La Niña and El Niño, whose phases make up the naturally occurring El Niño-Southern Oscillation, tend to alternate every few years. La Niña typically brings wet, cooler conditions to much of Australia, whereas El Niño tends to bring drier, hotter conditions.

‘The events are driven by changes in sea-surface temperature in the tropical Pacific Ocean,’ the authors write. ‘During an El Niño, the surface temperature is warmer than usual. During a La Niña, it’s colder than usual.’

Greenhouse-gas emissions ‘the culprit’

Even small changes in sea-surface temperature can cause large changes in the atmosphere, the authors write, which is why El Niño and La Niña events can dramatically affect global weather patterns. In the past half-century, however, these events have occurred more often.

To understand the impact of climate change, Cai and Santoso analysed simulations produced by 43 ‘climate models’, or computer simulations of Earth’s climate system. They compared simulations from between 1901–1960 with those from 1961–2020. Most results showed an increase in the variability of the El Niño-Southern Oscillation since 1960, and that strong events have occurred more frequently than average since 1960.

‘We then examined climate simulations over hundreds of years before humans started ramping up greenhouse-gas emissions, and compared these to the simulations after 1960,’ they wrote.

‘This analysis showed even more clearly the very strong variability in the El Niño-Southern Oscillation after 1960. This reinforces the finding that human-caused greenhouse-gas emissions are the culprit.’

Strong variability has contributed to more extreme and frequent droughts, floods, heatwaves, bushfires and storms around the world, the authors say, and note that research indicates that the oscillation will continue to change this century, bringing more intense and more frequent El Niño and La Niña events. ‘We can also expect more frequent swings from a strong El Niño to a strong La Niña the following year,’ they say.

‘These predictions apply to various emission scenarios. Even if greenhouse-gas emissions were slashed and global warming was kept to 1.5°C, as per the goal of the Paris Agreement, we can expect more frequent strong El Niño events for another century. That’s because the Pacific Ocean holds a lot of heat, which will take several decades to dissipate,’ they write.

Science investment ‘lamentable’

While the Australian Academy of Science welcomed the Albanese government’s continuing support for science and research in the 2023–24 Budget, Australia’s overall investment in science remained ‘lamentable’, according to the President of the Australian Academy of Science, Professor Chennupati Jagadish.

‘Figures released in late April show that the Australian Government’s investment in science, research and innovation is the lowest on record, at 0.49% of GDP,’ Professor Jagadish said.

He recognised that reversing the downward trend of government investment in R&D was not the work of any single budget, saying that it would take ‘a decade or more of commitment and effort from government, industry and the higher education sector to boost total investment in R&D. Work must start today.’

The academy saw the financial statement as a ‘business as usual’ budget for science, continuing to invest in Australian universities, science agencies, national research infrastructure, training scientists, supporting business research and development (R&D) and the broader science system.

However, Professor Jagadish said the academy was disappointed to see that the government’s flagship initiative to invest in international collaboration, the Global Science and Technology Diplomacy Fund, had been earmarked for reductions over the forward estimates.

The academy noted that the Budget had made ‘worthwhile investments in recognition of the value that science brings to the nation’, including \$4.5 billion in science and research through universities in 2023–24 and \$3.3 billion to support research and development in industry; more than \$3.5 billion in the science agencies like CSIRO, including ongoing funding for the Australian Institute of Marine Science (AIMS) and Questacon; funding to establish Environment Protection Australia, Environment Information Australia, a review of the Murray Darling Basin Plan, and reform ‘our failing environmental laws’; and investments in scientific advice through the National Science and

Technology Council, supporting the National Reconstruction Fund, Quantum science and responsible artificial intelligence.

While acknowledging that work was continuing in government to modernise policy settings for the science system, Dr Jagadish noted that ‘Australia still lacks a whole-of-government and society plan to improve Australia’s dwindling level of research and development investment.’

‘The academy has recommended two key actions with which we can get started—formalising policy to get a national target to lift R&D from 1.79 per cent to 3 per cent, and an independent review of the entire science and research system,’ he said.

‘The Academy looks forward to working with government to create a modern research enterprise able to support and advance science in Australia and to support our economy.’

RTA to strengthen research collaboration

The inclusion of an innovation chapter in the Australia-UK Free Trade Agreement was ‘the first step’ in examining how the two nations used their research universities to drive innovation and commercialisation and their flow-on benefits, the Chief Executive of the Group of 8 (Go8), Vicki Thomson, said after the agreement came into force on 4 May.

‘This is now critical to delivering the advanced capabilities identified under Pillar 2 of AUKUS in areas such as AI and quantum computing,’ Ms Thomson said.

The AUKFTA is the first trade deal signed by an Australian government to include an innovation chapter.

Ms Thomson said the inclusion of the chapter underscored the impact of innovation on our future partnership with the UK and was even more important given the AUKUS agreement.

However, the inclusion of the chapter ‘must now mean something in reality to ensure the benefits of research and innovation are fully realised’, she said.

Before the FTA entered into effect, she said, the Go8 and the Russell Group had examined opportunities that the agreement would provide for research regarded as fundamental to achieving bilateral strategic goals. These two bodies represent Australia’s and the UK’s leading research-intensive universities and are key contributors to high-level research.

‘In 2022 the boards of the two groups committed to collaborate to increase two-way research collaboration, including increasing commercialisation activity, and to build on our status as trusted partners in areas of sensitive research,’ Ms Thomson said.

‘Further collaboration between Australian and UK research-intensive universities will also be crucial should the UK not gain access to Horizon Europe, the world’s largest research fund, which the Go8 is also seeking access to.’

How did SARS-CoV-2 get from bats to humans?

By Adrian Gibbs

*Summary of a talk to the Australian National University
Emeritus Faculty on 19 April 2023.*

We have all been affected over the past three years by the pandemic of the SARS-CoV-2 (SC-2) virus, and the COVID pneumonia diseases it causes. SC-2 first appeared in Wuhan in central China in late 2019 and spread eventually to all parts of the world, causing more than 8 million human deaths thus far. My interest comes from the fact that I have been a research virologist for the past 68 years, and my work theme, all along, has been ‘Where do viruses come from, and when?’. So where did SC2 come from, and how did it get to the human population?

SC-2 is a typical coronavirus and, like all viruses, is transmitted between infected and uninfected cells of its hosts by minute particles called virions, which, for coronaviruses, are round and covered with spikes with short stalks, so that in electron micrographs they look like a crown, hence the name. SC-2 is one of seven coronaviruses that infect human beings, the others being the SARS-1 (Severe Acute Respiratory Syndrome), MERS (Middle East RS) that has killed 858 cameleers and their camels since 2012, and four that cause ‘common colds’ each winter. Other coronaviruses infect domesticated chickens, cats, pigs etc, but bats, especially horseshoe bats, seem to be the principal reservoir of coronaviruses. Caves in the mountains of southern China and bordering states have been found to be a major population centre of these bats and the viruses that infect them, and viruses collected from them include those genetically closest to SC2. Wuhan is around 1000 kilometres from these caves.

SC2 is a close relative of SARS-CoV (SC-1), that caused 774 deaths in China and elsewhere in 2003; this epidemic involved at least six ‘lab leaks’ before it was fully controlled. SC1 was first noticed in Hong Kong, and within months was traced to infected ‘palm civets’ and a ‘raccoon dog’, animals that are farmed in the countryside, traded and eaten. So when SC-2 emerged, and was shown to be genetically close to SC-1, it was naturally assumed that SC-2 had entered Wuhan in the same way. Therefore I was intrigued by two publications in leading scientific journals in early 2020 that told me initially that I was probably correct and that SC2 came from bats to humans, probably via an intermediate mammal host; but I was surprised to be told that all other suggestions were ‘conspiracy theories’. The first, a *Lancet* statement, told me that ‘sharing of data on this outbreak is now being threatened by rumours and misinformation about its origins’, and the other, which became known as the ‘Proximal Origin’ paper, was in *Science*, and told me that ‘Our analyses clearly show that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus’, but gave no supporting evidence. Incidentally, the Proximal Origin paper is perhaps the most read scientific paper of all time, as it has been

downloaded more than 5.7 million times, and has been perhaps accurately described as ‘a conclusion in search of evidence’.

However Wuhan, a modern city of 11 million people in central China, contains at least nine high-security laboratories, and one, the Wuhan Institute of Virology, studies coronaviruses and claims the largest collection of coronaviruses of bats. Therefore it was entirely appropriate to consider whether a lab leak was the source of the pandemic, given that SC-1 had been shown to ‘escape’ from laboratories at least six times during its epidemic. Nonetheless the ‘Proximal Origin’ paper attempted to quash any discussion of lab leaks.

Of three SC-2 ‘emergence’ theories known to me, the most outlandish is that the virus came from a carbonaceous meteorite that entered the earth’s atmosphere over China in late 2019, but I know of no evidence to support this. The second theory is that SC-2 spread from bats to the human population by entirely natural processes, probably involving intermediate hosts, such as farmed or domesticated mammals; it is called the ‘zoonati’ theory. The third, the ‘lab leak’ theory, is that SC-2 spread from a coronavirus laboratory, probably in Wuhan.

‘Such experiments could have produced SC-2’

The first significant evidence supporting either of the principal theories came from the activities of the ‘US Right to Know’ organization, which sought information under freedom of information laws about the discussions that led to the Proximal Origin paper. Emails, etc, often greatly redacted, showed that it was the real possibility of a lab leak that initiated the discussions. Virologists found some features in the genetic sequence (i.e. the genome) of SC-2 that suggested it had been manipulated in a laboratory. The discussions were organised by Jeremy Farrar, Director of the UK’s Wellcome Trust, and Tony Fauci, head of the National Institute of Allergy and Infectious Diseases (NIAID) section of the US National Institutes of Health, and involved a group of senior virologists from around the world. Their principal concern was that the SC-2 genome encoded a ‘furin cleavage site’ (described below) in its spike gene. This site has not been found in any of the more than 50 known closest relatives of SC-2, although it has been found in a few more distantly related coronaviruses. The virologists knew that this feature could have been inserted in a laboratory (that is, it was technically feasible), and could also account for the very fast spread of SC-2 in the human population. However, after expressing their concerns in a phone hook-up in early February 2020, the group decided to prepare the Proximal Origin paper, which omitted to mention either their earlier concerns or the fact that Farrar and Fauci, who had ‘prompted’ and helped prepare the paper, decided not to be co-authors.

Another important document that surfaced was a grant application made by the EcoHealth Alliance to the US military research funding organisation called DARPA (Defense Advanced Research Projects Agency). The EcoHealth Alliance of New York is a not-for-profit organisation which aims to study human pathogens and devise methods for their control. Its head is Peter Daszak, who was a co-author of the initial *Lancet* statement. The 2017 application to DARPA was for funding for its DEFUSE project, which aimed to isolate bat coronaviruses and then, in a laboratory, to genetically enhance their virulence

and search for ways of controlling them! The DEFUSE project involved the laboratories of Ralph Baric in North Carolina in the United States and Shi Zengli at the Wuhan Institute of Virology in Wuhan. Of concern was that the DEFUSE application stated, in great detail, their intention to add furin cleavage sites to many of the coronaviruses they had isolated from bats, and to assess the effects. Such experiments could have produced SC-2. The DEFUSE application was unsuccessful, but another FOI'd email of Daszak stated that they would fund the project in other ways.

I have trawled scientific publications and the web, especially Twitter and YouTube, for evidence to support the 'zoonati' and 'lab leak' theories, as the mainstream media have mostly failed to discuss them in a balanced way.

There is, it seems, little evidence to support the 'zoonati' theory despite media campaigns stating otherwise—the contrast with the SC-1 outbreak of 2003 is clear. Whereas infected intermediate hosts were found within weeks of the 2003 SC-1 outbreak, none of more than 1400 tested farmed wild animals, especially from Yunnan in south-eastern China, have been found to be infected with SC-2. Worobey *et al.*, in a *Science* paper in 2022, claimed that the first people infected with SC-2 in Wuhan were clustered around its large and central Huanan Seafood Market (HSM). However, it has been subsequently shown that this was because samples were deliberately collected from around the most likely source, the HSM. The HSM was closed in January 2020 and many hundreds of 'environment swabs' and samples of unsold and frozen animals (18 species) were collected from it for testing by the China Center for Disease Control and Prevention. Gene sequencing tests of these, reported in *Nature* by Liu *et al* in 2023, found no link between evidence of animal DNA and evidence of SC-2 RNA. So no evidence of hosts bridging the gap between bats in caves and humans in Wuhan has been found. Another important difference between the SC-1 and SC-2 outbreaks is that phylogenetic evidence showed the step-wise adaptation of SC-1 to the human population, but this is missing in the SC-2 outbreak, where the virus seemed already especially well adapted to humans when it first emerged.

SC-2 'seems to have arrived pre-adapted'

Each spike on a coronavirus virion is constructed from three identical copies of its spike protein. They wind and bond together to form a tri-lobed globular head with a long tail that attaches the spike to the outer fatty membrane of the virion. The surface fatty membrane of all cells is covered with a variety of molecules, some of which are used by viruses as specific 'receptors' to aid their entry. The spikes of coronaviruses aid infection of host cells in two stages. The outer surface of the globular head of SC-2 specifically attaches to a cell-surface protein named ACE-2, so that the virion becomes positioned close to the surface of the host cell. Another cell surface protein, which is a proteolytic enzyme called furin, cuts the middle of spike tails using the 'furin cleavage site' (a string of just four amino acids, two of them arginine), and this 'activates' the base of the spike tail to fuse with the host membrane, and allow the contents of the virion to enter and infect the cell. Computer modeling by Nikolai Petrovsky and his colleagues showed that, of the 14 known ACE-2 proteins, the SC-2 spike bound most strongly of all to human ACE-2, but to horseshoe bat ACE-2 ranked ninth. That is the likely reason that SC-2 spread so quickly in the human

population. It seems to have arrived pre-adapted! Furthermore, the 12 nucleotides encoding the furin cleavage site are a human-friendly set.

Most of the evidence supporting a lab leak has come from the work of a diverse international group of gene sequence analysts. One, who in Twitter has the pseudonym 'Dog's Breakfast', has reported that pairwise comparisons of most published bat coronavirus sequences show features that are inconsistent with normal evolution by point mutations and recombinant shuffling. Many of the analysts call themselves 'Drastic' (Decentralized Autonomous Search Team Investigating COVID-19). One, Alex Washburne, has shown that the distribution of nucleotide sites for cutting the SC-2 genome into biochemically manageable fragments are probably those of an engineered virus. The largest body of lab leak evidence is in the several published reports from Drastic, and others, of skillfully analysed contaminants in so-called SRA (Sequence Read Archives) data. This data is an intermediate stage of modern DNA sequencing, and is recorded in the Genbank database. These contaminants have revealed that coronaviruses and other dangerous viruses (e.g. Nipah and unreported MERS-related viruses) are being genetically manipulated in several Chinese laboratories in both Wuhan and elsewhere in China. This and other work is discussed in detail in a comprehensive YouTube talk by Valentin Bruttel (<https://www.youtube.com/watch?v=EuuY94tsbls>). Other sources of useful and, I believe, unbiased information on the origin of SC2 are <https://www.pnas.org/doi/10.1073/pnas.2202769119>, <https://youtu.be/morj-3rdWwM> and <https://www.researchgate.net/publication/359855384>.

At present there is, I believe, no evidence of a zoonotic chain linking bats to Wuhan, but there is clear evidence that SC-2 is probably a product of genetic manipulation (GM), and that several laboratories in the environs have been involved in GM work with coronaviruses and other viruses with 'pandemic potential'. We must, of course, also be open to the possibility that SC-2 got from the bats of Yunnan to the humans of Wuhan in more than one way.

The present 'wild west' state of world GM virology is a clear threat to humanity; in total more than 60 high security laboratories have been, or are being, built around the world, most of them in cities. It is also clear that the present national and international regulations governing GM virological research and its funding are totally inadequate. An independent international body comparable to the WHO and IAEA is essential for establishing adequate safety protocols. It should be staffed by fixed-tenure intelligent polymaths, not GM virologists with funding, intellectual or institutional conflicts of interest. Laboratories certified to do GM virology should also have human quarantine facilities so that all staff who have worked with risky pathogens can have mandatory post-work quarantine. The public should insist on these and other safety features for the post-SC-2 world by joining and promoting bodies such as BioSafetyNow (<https://biosafetynow.org/>) and the Pathogens Project of the Bulletin of the Atomic Scientists (<https://thebulletin.org/>).

New free parking plan for Emeritus Faculty seminars

Thanks to the generosity of the Vice-Chancellor, Professor Brian Schmidt, ample free parking is now available for members and guests attending scheduled Emeritus Faculty seminars and events. The Vice-Chancellor has made the driveway of his on-campus house at 21 Balmain Crescent available for parking from 11:45am to 3:30pm on those days.

To access the parking, drive along Balmain Crescent, past the Emeritus Faculty's Molony Building, keeping University House on your right. After you drive up the small hill towards the end of Balmain Crescent and the crescent turns a little to the right, you will see a sign for 21 Balmain Crescent. This is at the entrance to a car park for the Research School of Earth Sciences and the Vice-Chancellor's driveway



(see photo). A yellow-and-black sign on the left of the entry will say 'Emeritus Faculty parking only'. Beyond that a broad parking area on the right-hand side of the road is for our use. Although parking is free, all cars must be moved before 3:30pm.

The new arrangements proved to be a great success for the well-attended seminar on 3 May by former Vice-Chancellor Professor Ian Chubb, who spoke about his personal experiences with ill-health when he encountered the present cumbersome bureaucracy used to regulate clinical drug trials in Australia. Professor Chubb then went on to explain his role in a recent wide-ranging review of this bureaucracy by an enquiry commissioned by the federal government. He outlined the enquiry's key recommendations and explained how the recommended changes would speed up trial access to new drug therapies and increase the attractiveness of Australia for companies looking to set up clinical trials.

The animated discussion that followed indicated that Professor Chubb's presentation had been very stimulating and, by any measure, a great success. The number of cars making use of the free parking at 21 Balmain Crescent was also a strong indication of the level of interest in the talk.

All members are strongly encouraged to make use of the free parking that the Vice-Chancellor has kindly made available. The old adage certainly applies in this case: *'use it or lose it'*.

— ANU Emeritus Faculty Committee

Diary dates

Focus on Angkor at lunchtime faculty talk

Archaeologist Aedeon Cremin will discuss current developments at Angkor when she presents the ANU Emeritus Faculty Lunchtime Talk ‘What's happening with archaeology at Angkor?’ in the Molony Room, 24 Balmain Crescent, at noon on Wednesday, 7 June.

Angkor was reopened to foreign research in 1992. Much has now been learnt, and the research has contributed to the development of tourism. However, in the past couple of years there has been a shift in political support which effectively discourages certain groups from working at Angkor itself—though they are welcome to work elsewhere in Cambodia. Dr Cremin’s talk is based on the most recent developments and on work in progress.

Dr Cremin trained in Ireland and taught European archaeology at the University of Sydney for more than 20 years. She later taught at both the ANU (Roman Britain) and the University of Canberra (World Heritage). From 2001 to 2015 she headed the ceramics-research team for the Greater Angkor Project—a collaboration between the University of Sydney and the École Française d’Extrême Orient in Cambodia.

Parking will be available at the Vice-Chancellor’s residence from 11.45 am to 3.30pm, indicated by a sign stating 'Emeritus Faculty parking only'. The driveway, marked ‘private road’, is at 21 Balmain Crescent, just to the left as one enters Mills Road from Balmain Crescent.

Faculty’s projects symposium set for July

The ANU Emeritus Faculty’s 2023 Projects Symposium will be held at the Molony Room, 24 Balmain Crescent, from 9.30am to 4.30pm on Wednesday, 12 July 2023.

Faculty members who would like to give a presentation about their recent or current research should email Ian Keen (ian.keen@anu.edu.au) with a title and abstract of the proposed presentation. Talks should be of about 30 to 40 minutes’ duration.

Library celebrates Australia’s sporting life

Australia’s sporting culture will be the subject of the exhibition *Grit & Gold: Tales from a Sporting Nation*, which opens at the National Library of Australia on 9 June and runs till November. The event celebrates the nation’s rich sporting heritage and its effect on our culture over the years. Through a collection of books, magazines, paintings, drawings and photographs, the exhibition retells the stories that have brought Australians the pleasure of winning and pain of losing. Memories and memorabilia of sporting events from the Olympics, tennis, swimming, cricket and racing will be on display. Entry is free, and booking is not required.

Meet the Author events

May 31, 6pm: Professor Marcia Langton and Professor Aaron Corn will discuss their new book, *Law: Way of the Ancestors*, with Anthony Connolly. Cinema, Kambri Cultural Centre.

June 6, 6pm: Gideon Haigh will discuss his new book, *On the Ashes*, with Tim Gavel. From over three decades of covering The Ashes, Haigh has brought together a comprehensive account of the great cricketing contest between Australia and England—the world’s oldest sporting rivalry—from the colonial era to the present day. Frank Bongiorno will give the vote of thanks. Cinema, Kambri Cultural Centre.

June 7, 6pm: Karen Middleton will talk with Christine Helliwell and Mark Willacy about their books *Semut* and *Rogue Forces*, winners of the 2022 Prime Minister’s Awards for Australian History and Non-Fiction, respectively. Cinema, Kambri Cultural Centre.

June 13, 6pm: Former Chief Scientist Alan Finkel will discuss his new book, *Powering Up: Unleashing the Clean Energy Supply Chain*, with Professor Ken Baldwin. Cinema, Kambri Cultural Centre.

June 20, 6pm: Sally Young will talk with Mark Kenny about her new book, *Media Monsters*. The vote of thanks will be given by Frank Bongiorno. Cinema, Kambri Cultural Centre.

June 28, 6pm: Bruce Wolpe, Senior Fellow (non-resident) at the United States Studies Centre at the University of Sydney, will be in conversation with Mark Kenny on his new book, *Trump's Australia*. Bruce is a regular contributor on US politics across media platforms in Australia. Allan Behm will give the vote of thanks. Cinema, Kambri Cultural Centre.

July 31, 6pm: Ryan Cropp will discuss his biography *Donald Horne: A Life in the Lucky Country* with Mark McKenna. The vote of thanks will be given by Allan Behm T2, Kambri Cultural Centre.

August 2, 6pm: Anna Funder will talk about her new book, *Wifedom. Mrs. Orwell's Invisible Life*, with Virginia Haussegger. Sally Pryor will give the vote of thanks. Cinema, Kambri Cultural Centre.

August 8, 6pm: Paul Ferrell will talk with Amy Remeikis about his new book, *Gladys. A Leader's Undoing*. John Warhurst will give the vote of thanks. Cinema, Kambri Cultural Centre.

August 14, 6pm: Albanian author and academic Lea Ypi will be in conversation with Allan Behm on her memoir, *Free. Coming-of-Age at the End of History*. Lea Ypi, a professor of political theory at the London School of Economics, was recently named as one of the world’s top ten thinkers by the British magazine *Prospect*, and by the *Frankfurter Allgemeine Zeitung* as one of the most important cultural personalities of 2022. The vote of thanks will be given by Kim Rubinstein.

September 13, 6pm: Leigh Sales will talk with Brian Schmidt about her book *Storytellers: Questions, Answers and the Craft of Journalism*. Sales takes her readers on a tour of the profession, letting some of Australia’s best-known

journalists talk about their work and their approach to the craft. Virginia Haussegger will give the vote of thanks. Cinema, Kambri Cultural Centre.

October 3, 6pm: Chris Hammer will be in conversation about his latest crime novel. Cinema, Kambri Cultural Centre.

October 26, 6pm: Kate Fullagar will talk about her new book on Governor Arthur Phillip and Bennelong. Cinema, Kambri Cultural Centre.

November 2, 6pm: Richard Flanagan will be in conversation about his new book *Question 7*, a blend of fiction and nonfiction. T2, Kambri Cultural Centre.

November 7, 6pm: Bryan Brown will be in conversation about his new novel, *The Drowning*. Cinema. Kambri Cultural Centre.

November 8, 6pm: Christos Tsiolkas will discuss his new novel, *In-between*. Cinema, Kambri Cultural Centre.

November 14, 6pm: Wendy Harmer will talk about her memoir, *Lies my Mirror Told Me*. Cinema, Kambri Cultural Centre.

ANU/*Canberra Times* Meet the Author events are held in association with Harry Hartog Bookshop. Books are available for purchase before and after each event. Pre-event book signings will be available from 5.30pm and again after the event. Registration is required and can be made at Registrations at anu.edu.au/events. In line with ANU's Covid policy, masks are no longer required. Enquiries to the convenor, Colin Steele, at colin.steele@anu.edu.au.

The Symposium by University House wine bar (Shop 13, 152 University Avenue, Acton, next to the Kambri cultural centre) will be open for dining after meet the author events. No bookings necessary. Food and wine details at <https://unihouse.anu.edu.au/eat/symposium/>.

Examining the past, the present and the personal

Portrait 23: Identity, an exhibition at the National Portrait Gallery, features new work by 23 artists and collectives who take ambitious approaches to examine who they are and what it means to represent themselves, their communities, their histories and contemporary society. The artists use street art, textiles, performance, photography, ceramics, painting, drawing, soft sculpture and bronze works to challenge the boundaries of portraiture. The exhibition closes on 18 June.

Getting to grips with the material world

Objects made from glass, leather, ceramics, metal and wood feature in *Material World*, a new exhibition at the National Museum of Australia that explores the story of design, a story of necessity, creativity, commerce and research, with objects shaped by both traditional and new technology and materials. The objects on show are evidence of the creativity and innovation of Indigenous peoples, early settlers, scientists, engineers, designers, artists and architects. Runs until 15 April next year. The major exhibition *Feared and Revered: Feminine Power through the Ages*, will close on 27 August. It features more than 160 exhibits drawn from six continents and spanning 5,000 years of history, from 2800 BCE to the present. The exhibits, on loan from the collections of the

British Museum, explore the power and diversity of female spiritual beings in cultural traditions and beliefs around the world, and shows how they have shaped understanding in a variety of cultures.

Expressing the notion of migration

Four works that express different aspects of artist Haegue Yang's practice feature in the exhibition *Changing from From to From*, which runs till 24 September at the National Gallery of Australia. The exhibition title is taken from a poem by Chinese-British conceptual artist Li Yuan-chia and, the gallery says, evokes the notion of migration between locations. The four works featured express different strands of Yang's practice, linked by her interest in mobility and transformation. Yang describes her approach to art as a form of abstraction that is filled with personal and mystical connections.

Items of note

James Grieve's Swann back in print

James Grieve's translation of *Swann's Way* (*Du côté de chez Swann*), the first volume of Marcel Proust's great novel sequence *A Search for Lost Time* (*A la recherche du temps perdu*) has just been republished by New York Review Books.

Grieve, a longstanding member of the Emeritus Faculty who died in 2020, translated the novel in the early 1980s in part because of his dissatisfaction with the original English rendition. He dedicated the translation 'to all those who once read [Proust] in the belief that he was abstruse; and to those who, in the same belief, never read him'.

The translation was originally published by the Australian National University in 1982. James later translated the second volume of *A Search for Lost Time* for the Penguin edition in 2002. A copy of the republished *Swann's Way* has been placed in the Emeritus Faculty library. The books can be purchased from New York Review Books (<https://www.nyrb.com/products/swanns-way>) at \$US18.95.

ANU tops national debating championships

The ANU 1 team of the ANU Debating Society became the national debating champions recently when they won the Australian Intersvarsity Debating Championships.

ANU 1, featuring Jordyn Gibson, Gypsy Polacheck and Tetsushi Kajihara, won nine debates during the tournament. It also won three smaller tournaments in preparation for the championships.

Gypsy Polacheck was recognised as the equal best novice speaker of the tournament, while Jordyn Gibson received a prize for best speaker in the grand final, held against UNSW 1.

The Australian Intervarsity Debating Championships is Australia's annual highest-level intervarsity debating competition. It was hosted this year by the University of Technology Sydney and Macquarie University.

The 2023 championships success was the first for ANU since 2006. 'This achievement is a huge testament to Jordyn, Gypsy and Tetsushi's skill, as well as the commitment of every single member of ANU Debating who trained with and against the team and supported them during the tournament,' said Ally Pitt, President of ANU Debating.

Audit finds ARC 'active' on security risks

An audit report issued on 17 May has found that the Australian Research Council had taken active steps to manage foreign interference. The internal report on Foreign Interference and Security Risk had reviewed the ARC's performance in assessing foreign interference and national security risks since the launch of the *Guidelines to Counter Foreign Interference in the Australian University Sector* in 2019.

The audit report found that the ARC had worked closely with the Departments of Education and Home Affairs and had taken active steps to manage the risk of foreign interference and observe national security at each phase of the ARC's National Competitive Grants Program. This included establishing specific and appropriate criteria for conducting checks; improved documentation and record-keeping; establishing a due diligence committee; and providing administering organisations with the opportunity to respond to risks identified during the due diligence process on applications.

The audit report made some practical suggestions on opportunities to improve procedures and policies. The ARC says it is taking action on these, in consultation with stakeholders.

ANU technology leads into micro world

Physicists at The Australian National University (ANU) and the University of Adelaide are using nanoparticles to develop new sources of light that will allow researchers to examine extremely small objects—those that are thousands of times smaller than a human hair.

The research, published in *Science Advances*, could have major implications for medical science by offering an affordable and effective solution to analyse objects that are too small for microscopes to see. The work could also benefit the semiconductor industry and improve quality control of the fabrication of computer chips.

The ANU technology uses carefully engineered nanoparticles to increase by up to seven times the frequency of light that cameras and other technologies see. The researchers say there is 'no limit' to the point to which the frequency of light can be increased. The higher the frequency, the smaller the object that can be seen.

The technology, which requires only a single nanoparticle to work, could be implemented into microscopes to help scientists zoom into the world of exceptionally small things at 10 times the resolution of conventional

microscopes. This would enable researchers to study objects that would otherwise be too small to see, such as the inner structures of cells and individual viruses.

‘Conventional microscopes are only able to study objects bigger than about ten-millionth of a metre,’ said lead author Dr Anastasiia Zalogina, from the ANU Research School of Physics and the University of Adelaide. ‘However, there is growing demand across a range of sectors, including the medical field, to be able to analyse much smaller objects down to one-billionth of a metre,’ she said. ‘Our technology could help meet that demand.’

Recycling may create microplastics pollution

A new peer-reviewed report has called for further studies to be conducted to increase our knowledge of microplastic pollution that may be caused by plastic recycling processes.

The paper in the online *Journal of Hazardous Materials Advances* (<https://www.sciencedirect.com/science/article/pii/S2772416623000803>) argues that more and improved plastic recycling is needed in the face of the growing problem of global plastic pollution. ‘There is limited knowledge or assessment of microplastic pollution from point sources such as plastic recycling facilities globally,’ the report’s authors write.

A pilot study conducted by the research team investigated microplastic pollution from a mixed-plastics recycling facility in the United Kingdom. It aimed to improve quantitative understanding of microplastic pollution released from a recycling facility to receiving waters. It found that somewhere between 6 per cent and 13 per cent of plastic processed could end up being released into water or the atmosphere.

Filtration was found to remove most microplastics greater than 5 micrometres in size, with high removal efficiencies for microplastics greater than 40 micrometres. However, microplastics of less than 5 micrometres were generally not removed by the filtration and were subsequently discharged. The authors recommend incorporating additional filtration to remove the smaller microplastics before wash water is discharged. Evidence of microplastic wash-water pollution suggests that it also may be important to integrate microplastics into water quality regulations.

Bookshelf

Navigating Prosperity and Security in East Asia

Edited by Shiro Armstrong, Tom Westland and Adam Triggs

ISBN (print): 9781760465650

ISBN (online): 9781760465667

May 2023, ANU Press

DOI: <http://doi.org/10.22459/NPSEA.2023>

The world's two largest economies, those of the United States and China, are locked in a trade war, complicating policy choices internationally. These choices are sharper for the countries of East and Southeast Asia than they are elsewhere because the multilateral rules-based economic order on which East Asian economic integration and cooperation is built is under threat.

Economic policy has never been separate from security considerations. For decades, the national security risks inherent in economic exchange have been mitigated under a US-led system that allowed the strengthening of economic ties, including between China and the rest of the world. But economics and security are increasingly entangled in a way that is damaging to both, creating a dangerous trade-off. Now, as global uncertainties grow, the risks of international exchange—rather than its benefits—are beginning to dominate the calculus for some policymakers.

Against this backdrop, how can Southeast Asian countries and US allies in Asia balance their security interests and their economic interests? And how can these countries, individually and collectively, broaden their policy options and deepen economic integration? This volume investigates the domestic and international dimensions of these questions.

The Australian Constitution and National Identity

Edited by Anna Olijnyk and Alexander Reilly

ISBN (print): 9781760465636

ISBN (online): 9781760465643

May 2023, ANU Press

DOI: <http://doi.org/10.22459/ACNI.2023>

What does Australia's Constitution say about national identity? A conventional answer might be 'not much', yet recent constitutional controversies raise issues about the recognition of First Peoples, the place of migrants and dual citizens, the right to free speech, the nature of Australia's democracy, and Australians' continuing connection to the British monarchy. These are constitutional questions, but they are also questions about who we are as a nation.

This edited collection brings together legal, historical, and political science scholarship. These diverse perspectives reveal a wealth of connections between the Australian Constitution and Australia's national identity.

More Than Fiscal

The Intergenerational Report, Sustainability and Public Policy in Australia

By Andrew Podger, Jane Hall and Mike Woods

ISBN (print): 9781760465773

ISBN (online): 9781760465780

May 2023, ANU Press

DOI: <http://doi.org/10.22459/MF.2023>

Every five years the Australian Treasurer is required to publish an intergenerational report (IGR) which examines the long-term sustainability of

current government policies and seeks to determine how demographic, technological and other structural trends might affect the economy and the budget in coming decades. Despite these lofty objectives, the five IGRs produced from 2002 have received only muted applause. Critics say that they are too mechanical, too narrow and too subject to the views of the government of the day, and that they don't provide the intended wake-up call for public understanding of looming economic, social and environmental issues.

This analysis of the most recent IGR (2021) is based on a workshop hosted by the Academy of the Social Sciences in Australia. While finding that the 2021 report is an improvement on its predecessor, the authors identify fiscal and broader policy issues that deserve greater attention, including Australia's structural deficit, rising inequality and the impacts of climate change. They argue that the report fails to discuss the policies required to improve resilience against future shocks and propose that future IGRs be prepared with greater independence, cover all levels of government, have more transparent analysis and draw upon a wider 'wellbeing' approach to long-term sustainability.

Law and the Quest for Gender Equality

By Margaret Thornton

ISBN (print): 9781760465490

ISBN (online): 9781760465506

April 2023, ANU Press

DOI: <http://doi.org/10.22459/LQGE.2022>

For centuries, this volume argues, law was used to subordinate women and exclude them from the public sphere, so it cannot be expected to become a source of equality instantaneously or without resistance from benchmark men—that is, those who are white, heterosexual, able-bodied and middle class. Equality, furthermore, was attainable only in the public sphere, whereas the private sphere was marked as a site of inequality; a wife, children and servants could never be the equals of the master. Despite their ambivalence about the role of law and its contradictions, women and others felt that they had no alternative but to look to it as a means of liberation.

This patriarchal heritage, the subtext of this collection of essays, has continued to impede the quest for equality. It informs not only gender relations in the private sphere, as illustrated by domestic violence and sexual assault, but also the status of women in the public sphere. Despite the fact that women have entered the paid workforce, including the professions, in large numbers, they are still expected to assume responsibility for the preponderance of society's caring. The essays show how maternal and caring roles, which are still largely viewed as belonging to an unregulated private sphere, continue to be invoked to detract from the authority of the feminine in the public sphere. The promise of antidiscrimination legislation in overcoming the heritage of the past is also shown to be somewhat hollow.

Administration

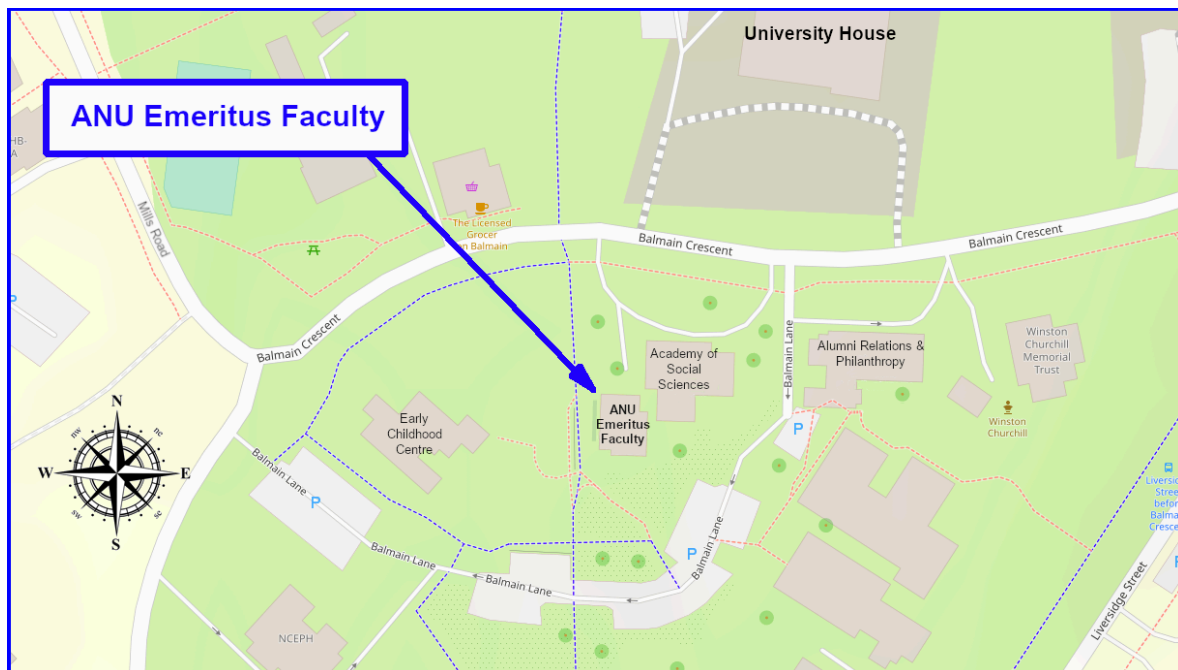
Arrangements for ANUEF room bookings

Requests to book the Molony Room should be addressed to the Secretary of the ANU Emeritus Faculty, Jan O'Connor, at jantanress@gmail.com or 6247 3341.

Finding the Molony Room

The Molony Room is at 24 Balmain Crescent, on the south side of Balmain Crescent almost opposite University House.

It is Building 1c on <https://tinyurl.com/yckuknbj>, set back between 22 Balmain Crescent (the Acton Early Childhood Centre) and 26 Balmain Crescent (the Academy of the Social Sciences). Four free car parking spaces reserved for ANUEF members visiting the Molony Room in the Balmain Lane Car Park immediately south of the Molony Room. The room is marked on: <https://tinyurl.com/y7gsyqgh>



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