



# The Bulletin 434

The Royal Society of New South Wales

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## For Your Diary:

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**RSNSW & SMSA**

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**FRZS**

‘A Gigantic Frog in a Strange Land: The Saga of the Cane Toad in Australia’

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**Sydney Science Festival**

**Professor Elizabeth Blackburn AC**

**FAA FRS DistFRSN**

‘The Telomere Effect’

*(For more information, see p. 10)*



**Patron of The Royal Society of NSW**

Her Excellency The Honourable Margaret

Beazley AO QC

Governor of New South Wales

## 1275<sup>th</sup> OGM & Open Lecture

# ‘Democracy under Challenge: How can We Restore a Sense of Citizenship?’

**Wednesday, 7th August 2019**

**Professor Peter Shergold AC FRSN**

Chancellor, Western Sydney University



*See page 3 for more information*

**Date:** Wednesday 7<sup>th</sup> August 2019

**Time:** 6:00 pm for 6:30 pm

**Venue:** Gallery Room, State Library of NSW

(Entrance: Shakespeare Place, Sydney)

**Dress:** Business

**Entry:** \$15 for Members, Fellows and Associate Members of the Society, \$5 for full-time Students, \$25 for Non-Members (including a welcome drink)

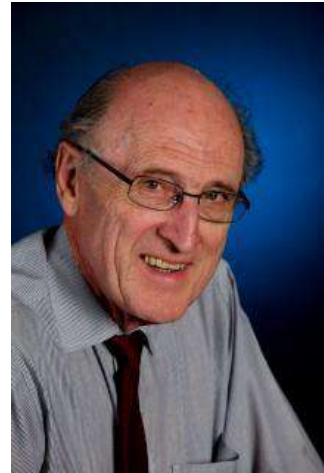
**Dinner (including drinks):** \$85 for Members and Associate Members, \$95 for Non-Members, \$70 for students.

**Reservations:** <https://nsw-royalsoc.currinda.com/register/event/60>

**Enquiries:** [royalsoc@royalsoc.org.au](mailto:royalsoc@royalsoc.org.au) Phone: 9431 8691

**All are welcome.**

# From the President



As I write I am in Valencia, Spain, on the brink of travelling across the Mediterranean (literally ‘the middle of earth’) to North Africa. This encourages me to think about the contribution of the ‘Moors’ to the intellectual matters that are at the heart of the Royal Society of New South Wales.

The Moors arrived in Spain from North Africa in 711 AD, bringing Islam to Europe. They left (or were ‘converted’, or worse when faced with the Inquisition) in 1492 on the instructions of Ferdinand and Isabella (where 1492 is the memorable year in which ‘Columbus sailed the ocean blue’). In between they could be said to have brought enlightenment to Europe, and according to some scholars were at the root of the Renaissance. Theirs was a relatively tolerant society (at least compared to the one it competed with). It was also strong in science, agriculture, astronomy, architecture and mathematics. These days we hear much about ‘algorithms’ (perhaps more than we want to hear). The name traces to Al-Khwarizmi, who took the lessons of Greek mathematicians, and went on to develop ‘algebra’ as we know it today. The Moors also persuaded Europeans to use the present number system, deriving from India, rather than the clumsy Roman system, which was still in place in mediaeval Europe. Imagine trying to use Roman numbers on a computer!

In the interests of their religion, as well as for practical purposes such as map making, the astronomers of the Golden Age of Islam made careful astronomical observations. Its medical scientists (as we would call them today) described the preparation of medicines and the course of diseases. More broadly, Moorish scientists helped to ensure that the valuable lessons of Greek science were not lost. The Golden Age of Islam left much for us to be thankful for.

Ian H. Sloan AO FAA FRSN  
President  
Royal Society of New South Wales  
[President@royalsoc.org.au](mailto:President@royalsoc.org.au)

**Professor Peter Shergold AC FRSN**

Chancellor

Western Sydney University

## **‘Democracy under Challenge: How can We Restore a Sense of Citizenship?’**



As in many liberal democracies, there is an increasing sense of concern in Australia that representative government is starting to erode from within – trust in political institutions is declining (especially amongst the young), consensus is fragmenting, populist responses are on the rise and ‘technocratic’ expertise and professional authority are increasingly decried. The public discourse that helps bind a civil society seems to be becoming ever less civil. Authoritarian leadership is more evident.

This talk suggests how a sense of democratic purpose might be restored though public services engaging their ‘publics’ in decision-making in more substantive ways. It will reveal how Peter is seeking to walk his talk, reflecting on his three decades as a ‘mandarin’ but focussing on his present role as Coordinator General of Refugee Resettlement in NSW.

**Professor Shergold AC FRSN** was an academic historian who became an influential public servant who ended up as a University Chancellor. In the Australian Public Service he headed successively the Office of Multicultural Affairs, the Aboriginal and Torres Strait Islander Commission, the Public Service Commission, the Department of Employment and the Department of Education, Science and Training. He was then appointed as Secretary of the Department of the Prime Minister and Cabinet. He now serves on boards, writes government reports and – amongst other things – is Chancellor of Western Sydney University and Coordinator General of Refugee Resettlement.

# 2019 Events

## Royal Society – Southern Highlands Branch

Date*	Event	Speaker	Topic	Location**
15-Aug-19	Public Lecture	Prof Rick Shine	A Gigantic Frog in a Strange Land	Mittagong RSL
19-Sep-19	Public Lecture	Dr Rebecca Carey	Volcanology	Mittagong RSL
17-Oct-19	Public Lecture	Prof Toby Walsh	2062 - The World that Artificial Intelligence Made	Mittagong RSL
21-Nov-19	Public Lecture	Prof Geordie Williamson	t.b.a.	Mittagong RSL

\*Lectures are normally the third Thursday of each month.

\*\*1st Floor, Room Joadja/Nattai.

### Professor Rick Shine AM FAA FRZS

Professor of Biology  
Macquarie University

### ‘A Gigantic Frog in a Strange Land: The Saga of the Cane Toad in Australia’



Join us to hear Professor Rick Shine talk about his research on Australia’s Most Unpopular Animal – the Cane Toad. Find out about how Cane Toads are adapting to Australia, and how the Australian wildlife is adapting to this alien amphibian. And as well as documenting the toad’s ecological impacts, Rick and his team have discovered ways to control toad numbers, and to help the native fauna coexist with these toxic invaders. Along the way, Rick has won the top awards for research in the state (New South Wales Scientist of the Year) and the country (Prime Minister’s Prize for Science), as well as for science communication. You’ll never think of Cane Toads in quite the same way again!

**Rick Shine** is a Professor of Biology at Macquarie University. His primary research focus has been on the ecology and conservation of snakes including studies in Africa, Asia, Europe, North America and the Pacific Islands. His most extensive work has been on the snakes of tropical Australia, and on the impact and control of the invasive Cane Toads that arrived at his research site in northern Australia in 2005. The work of Rick’s team has made the Cane Toad an iconic symbol of biological invasions, and of what we can do to buffer the impact of invasive species. His book *Cane Toad Wars* was recently published by the University of California Press.

# The Poggendorff Lecture

Wednesday 14<sup>th</sup> August 2019

**Professor Robert Park FRSN**  
University of Sydney

## ‘Cereal Killers: How Plant Diseases Affect Food Security’

- Date:** Wednesday 14 August 2019, 5:30pm for a 6:00pm start. Finish at 7:00pm.  
**Location:** The University of Sydney, Building F23, Level 5, Function Room.  
(The new building on the left as you walk into Campus from the City Road entry.)  
**Entry:** Free to Fellows, Members and Friends of the RSNSW and their guests. Nibbles available on arrival.  
**Parking:** Paid parking is available on Campus and the street.  
**Registration:** <https://nsw-royalsoc.currinda.com/event/68>  
**Enquiries:** royalsoc@royalsoc.org.au  
**Phone:** 9431 8691

Cereal plants are incredibly important – they are grown in greater quantities and provide more food energy worldwide than any other crop. We’ve been domesticating cereal plants for around 8,000 years and our efforts to develop better yielding and disease-resistant crops has had the negative effect of guiding the evolution of crop pathogens. We’ve inadvertently made new pathogen strains emerge that have at times caused crop failure and famine.

Find out how problems of inadequate food supply, the world’s increasing population and the emergence of new crop diseases are presenting significant challenges in ensuring adequate supplies of safe and nutritious food for all.

Professor Robert Park will reveal how plant diseases affect our very existence and the work his team does in developing new genetic approaches for sustainable and environmentally friendly crop disease control.

The 2018 Poggendorff Lectureship was awarded to Professor Robert F. Park, from the University of Sydney, by the Royal Society of NSW. A plant pathologist, Professor Park holds the Judith and David Coffey Chair in Sustainable Agriculture at the University of Sydney’s School of Life and Environmental Sciences. He is Director of the Australian Cereal Rust Control Program, which conducts research on the genetics and pathology of rust diseases of cereals. This program has a huge impact on agricultural production globally; in Australia alone, it conservatively returns some \$600 million to the economy each year.





Royal Society of New South Wales & Sydney Mechanics' School of Arts

National Science Week Talks



Dr Ragbir Bhathal FRSN

## Lecture 1: Aboriginal Astronomy



For over 60,000 years the Aboriginal peoples of Australia have both studied the stars and named them, with constellations having different names and stories in different regions. Last year the International Union (IAU), the peak scientific body for astronomers recognized some of their named stars and included them in the official catalogue of stars. Dr Ragbir Bhathal discusses various aspects of Aboriginal and Torres Straits Islander astronomy and its cultural uses such as finding food, telling the seasons and knowing when to conduct ceremonies. Although Aboriginal astronomy has clashed with Australia's dominant culture, their knowledge of the stars and constellations has been valuable in substantiating and winning land rights.

**Dr Ragbir Bhathal FRSN** served as a UNESCO consultant on museums/science centres, was the director of the Singapore Science Centre, one of four science centres of influence in the 20<sup>th</sup> century, and is a Distinguished Teaching Fellow at the Western Sydney University. He is also a Fellow of the Royal Society of NSW and the Royal Astronomical Society London, and a Visiting Fellow at the Research School of Astronomy and Astrophysics at ANU. Apart from astrophysics, he also carries out research in Aboriginal astronomy and engineering education. He has written 15 books, including two on Aboriginal astronomy. Dr Bhathal is a vocal advocate for an Australian museum dedicated to this country's first peoples.



**Date:** Monday, 12 August 2019

**Time:** 6 pm (for light refreshments), talk 6.30 to 7.30pm

**Cost:** \$15 Members and Fellows of RSNW and SMSA, \$20 non-members and guests

**Location:** Tom Keneally Centre, Sydney Mechanics' School of Arts, 280 Pitt St, Sydney

**Registration:** <https://smsa.org.au/events/event/aboriginal-astronomy/>

## National Science Week Talks

Em Prof Robert Llewellyn Clancy AM FRSN

### Lecture 2: Unexpected Results: Australian Science to 1950



This talk reveals the fascinating history of scientific research and discovery in Australia before 1950. The spirit of the Enlightenment helped shape our nation from colonial times onwards. Science in Europe was very different to 19<sup>th</sup> century Australia. Our less stratified society, consisting of a mixture of convicts and immigrants, was about being prepared to 'have a go' in a remote and harsh land. Ordinary men and women survived and forged ahead by solving problems using scientific methods.

The view that colonial and early 20<sup>th</sup> century science largely consisted of collecting and dispatching trophies of our unique natural history off to Britain is inaccurate. Rather, the science of the time was born of pragmatism, and this has laid the foundations for the development of 'modern science' in Australia. The question is, what can we learn from these past lessons?

**Emeritus Professor Robert Llewellyn Clancy AM FRSN** is a leading Australian clinical immunologist and a pioneer in the field of mucosal immunology, known for his research and development of therapies for Chronic Obstructive Pulmonary Disease (COPD), commonly known as emphysema. Emeritus Professor at the University of Newcastle's School of Biomedical Sciences and Pharmacy, he has long been involved in historical research, particularly in the areas of medical history and cartographic history. He has also developed a 'History of Medicine' course through the College of Physicians.



**Date:** Tuesday, 13 August 2019

**Time:** 6 pm (for light refreshments), talk 6.30 to 7.30pm

**Cost:** \$15 Members and Fellows of RSNSW and SMSA, \$20 non-members and guests

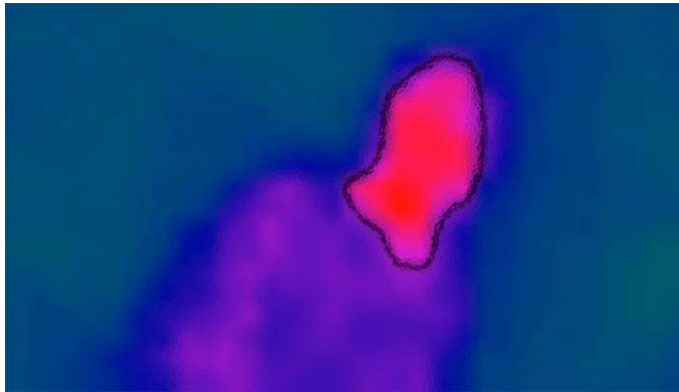
**Location:** Tom Keneally Centre, Sydney Mechanics' School of Arts, 280 Pitt St, Sydney

**Registration:** <https://smsa.org.au/events/event/unexpected-results/>

## National Science Week Talks

Dr Josh Harle

# Lecture 3: Machine Aesthetics of the Human Body



It's natural for us to see through a human lens. When we look out into the world we see it populated by the familiar: animals and devices imbued with human emotion and agency. With the rapid development and adoption of artificial intelligence and autonomous robotics, their humanoid faces may give us comfort, but beneath the facade they look back with a machine perspective. While we anthropomorphise them, they are 'mechanomorphising' us – seeing us as machines.

Art can help critique these models: it's all about exploring speculative ways of perceiving, understanding, and representing the world. Researcher and artist Dr Josh Harle explores how artists, working at the intersection of technology and science, can help us meaningfully engage with complex systems, giving us a more critical perspective on the future of these technologies. Moreover, rather than being relegated to the realm of “visual communication”, art can provide a valuable and timely contribution to research.

**Dr Josh Harle** is the director of Tactical Space Lab, and current Visiting Fellow at UNSW. His doctoral thesis combined study in Computer Science and Cybernetics, Philosophy, and Art to investigate how digital technology is used to make sense of the world. 'Human Jerky', which he curated at Verge Gallery in 2018, illustrated the monstrous, alien, and frankly terrifying visions of the Human that emerging technologies use through the related practices of five artists.



**Date:** Thursday, 15 August 2019

**Time:** 12.30 to 1.30 pm

**Cost:** Free

**Location:** Mitchell Theatre, Sydney Mechanics' School of Arts, 280 Pitt St, Sydney

**Registration:** <https://smsa.org.au/events/event/machine-aesthetics-human-body/>



## National Science Week Talks

Professor Mikhail Prokopenko FRSN

# Lecture 4: Complex Systems: Computer Modelling of Epidemics



Complex systems – including such things as communication and transport systems, ecosystems and the spread of disease – evolve and ‘self-organise’ over time. Influenza pandemics, for example, emerge at unpredictable intervals. Several major infections have occurred during the last 100 years, including the 1918 influenza pandemic (‘Spanish Flu’) that infected an estimated 500 million people — one-third of the world’s population! — and caused an estimated 50 million deaths. An influenza pandemic today, of the magnitude of the 1918 Spanish Flu, would cause 33 million deaths globally within six months. Professor Mikhail Prokopenko reveals how the development of very realistic computer models of our world helps us better understand and better deal with complex problems like flu epidemics. Recent research has indicated that the more urbanised society is, the more vulnerable it is to the spread of disease, a fact which helps us identify the best ways to intervene and curtail pandemics.

**Professor Prokopenko FRSN** has a strong international reputation in complex self-organising systems, with more than 180 publications, patents and edited books. Since 2014, he has been the Director of the Complex Systems Research Group (Faculty of Engineering and IT) at the University of Sydney. He also leads the post-graduate program on Complex Systems, including Master of Complex Systems.



- Date:** Thursday, 15 August 2019  
**Time:** 6 pm (for light refreshments), talk 6.30 to 7.30pm  
**Cost:** \$15 Members and Fellows of RSNSW and SMSA, \$20 non-members and guests  
**Location:** Tom Keneally Centre, Sydney Mechanics' School of Arts, 280 Pitt St, Sydney  
**Registration:** <https://smsa.org.au/events/event/computer-modelling-of-epidemics/>

## **Professor Elizabeth Blackburn AC FAA FRS DistFRSN**

Dept of Biochemistry and Biophysics, University of California San Francisco

### **‘The Telomere Effect’**



- Date:** Friday 16 August 2019, 6.30 to 7.30 pm  
**Location:** City Recital Hall, 2 Angel Place, Sydney  
**Entry:** \$25 for RSNNSW Members and Fellows, and for UNSW Alumni and Staff; \$15 for UNSW Students and Under 18s; \$35 General Admission  
**Booking Fee:** Internet \$5.50. Phone \$6.60. There is no booking fee for tickets purchased in person at the City Recital Hall Box.  
**Tickets:** <https://tickets.cityrecitalhall.com/5138/5139>

Nobel Laureate Elizabeth Blackburn delivers the inaugural Gerald Westheimer Lecture. This talk is part of the Sydney Science Festival and presented by UNSW Centre for Ideas.

Why does ageing take such different paths for different individuals? Why do some of us remain healthy and active into later life, while others age more rapidly? Elizabeth Blackburn's discoveries about telomeres, the protective caps at the end of our chromosomes, have transformed the way we think about these important questions and earned her a Nobel Prize in 2009. Although we have long understood the impact of our genetic inheritance on our health, Blackburn's work has shown us the key role that telomeres and the enzyme telomerase play in the ageing process. Be part of a special event with Elizabeth Blackburn as she discusses her work in this fascinating space and its implications for the future of ageing.

**Professor Elizabeth Blackburn AC FAA FRS DistFRSN** has been a leader in the area of telomere and telomerase research, having discovered the molecular nature of telomeres – the ends of eukaryotic chromosomes that serve as protective caps essential for preserving the genetic information – and co-discovered the ribonucleoprotein enzyme, telomerase. Blackburn and her research team also collaborate in a range of investigations of the roles of telomere biology in human health and diseases. Born in Australia, Dr Blackburn earned degrees from the University of Melbourne, University of Cambridge and Yale University. She has been awarded the Nobel Prize in Physiology or Medicine, the Albert Lasker Medical Research Award for Basic Medical Research, and in 2007 was named one of *TIME* magazine's 100 Most Influential People.

Report of the 1274<sup>th</sup> OGM

Wednesday 3<sup>rd</sup> July 2019

**Emeritus Professor Robert Burford FRSN**

School of Chemical Engineering

University of NSW

## **‘Past, Present and Future of Polymers: Is the Plastics Age Over?’**



The President Professor Ian Sloan AO FRSN introduced Emeritus Professor Robert Burford FRSN from The University of New South Wales to present the evening’s lecture. The search for synthetic alternatives (including polymers) to scarce natural materials is not new, and substitution occurred well before today’s plastic bottles and packaging. A reward of \$10,000 for billiard balls, hitherto made from Sri Lankan elephant tusks, ultimately led to thermosets derived from cellulose. Synthetic nylon stockings replaced unavailable silk (and made Du Pont wealthy) whilst synthetic rubber helped win the war. The early history of polymer manufacture combines uneducated invention and entrepreneurship with debtor’s courts and skulduggery. During the 20th century, today’s ‘commodity’ polymers emerged, these being based on hydrocarbons including ethylene and propylene. The public appetite for new synthetics that peaked in the 1950s and 60s (think of the movie *The Graduate*) has reversed despite polymer production showing unabated growth. Scarcely a day now passes without reminders of waste, whether it is floating ‘continents’ or containers of Australian plastic being returned from overseas. The solutions to today’s ‘polymer pollution’ need creative ideas and imaginative solutions but may provide lucrative opportunities.

The vote of thanks to Professor Burford was given by Professor Susan Pond FRSN, who presented him with a speaker’s medal.

**Report of 18 July 2019**  
**Royal Society, Southern Highlands Branch**

**Dr Christian Heim FRANZCP & Dr Caroline Heim**

Consultant Psychiatrist

Senior Lecturer, QUT

**‘Understanding the Mental Health Crisis and How Your Relationships Can Save You’**



Dr Christian Heim is a clinical psychiatrist, music lecturer and a Churchill fellow. He has been on the staff of several Australian hospitals and has a PhD from Sydney University. His music compositions can be heard on ABC classic FM. Christian’s podcasts and public lectures reference medicine and music and cover a range of topics from the mental health crisis, neuroplasticity and the pleasure myth right through to the neurobiology of love. In this lecture, he focused on how healthy relationships play a protective role in our mental wellbeing.

Dr Caroline Heim is a Senior Lecturer in Theatre at Queensland University of Technology. She holds a PhD in Drama from the University of Queensland, her main research interests being in the area of audience reception and actor/audience relationships. Before entering academia, Caroline worked as a professional actor on New York stages, winning a Drama League Award and receiving critical acclaim from *The New York Times*. It therefore came as no surprise to the 70 person audience that the combined performance of these two talented individuals produced an outcome of which the Royal Society charter could be proud. Its four disciplines of the Sciences, the Arts, Philosophy and Literature were intertwined and on display for all to see throughout this thought-provoking lecture.

Christian opened the lecture with a discussion on the rising incidence of mental illness, particularly for our younger people. Almost 1 in 5 adults in our society is on an antidepressant and this number is rising. It is estimated that half of us will experience mental illness in our lifetime. Behind the closed doors of his office, Christian has heard thousands of heart-breaking stories. He noted that self-harm, addiction and suicide are all increasing. There are more than 2,000 people in Australia committing suicide each year, while in the USA, numbers have risen to 45,000. Since 1999, the world suicide rate has increased by 33%. Separation anxiety has also risen dramatically in adults.

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Drawing from Christian's 18 years of clinical experience, the latest scientific evidence and their own research, this team presented remarkable insights into why mental illness rates are soaring. Together they combined science and entertainment to demonstrate how we all can become more aware of four healthy brain chemicals – dopamine, oxytocin, serotonin and endorphins – and the circumstances under which the concentrations of these hormones can be elevated or decreased in the body.

Christian gave many examples of how the concentrations of these neurotransmitters can readily be altered by each person by their behaviours. He gave detailed explanations of the function of each hormone, and the factors that influence their production. When he spoke of endorphins, he gave the example of the 'Runner's High', which carries the runner through his pain threshold. He spoke of the release of endorphins whenever you laugh, especially when the experience is shared with someone else. He said that for people in chronic pain, ten minutes of a good belly laugh was enough to relieve pain for two hours. He stated that being part of an orchestra releases endorphins and that participating with others in activities such as singing or dancing had a similar effect.



After quite a long discussion on each of the four hormones, Christian asked what we in our modern society were doing, or not doing, to cause the rates of mental illness to skyrocket as is happening. He said that there had never been a better time to be alive as regards our standard of living, health management, longevity, reduced infant mortality, amongst others, yet we had the stark figures of mental illness before us.

In answer to his own question, he raised many issues, but basically the message he was giving was that we as humans have lost a sense of connection to our fellow travelers and to our environment. Activities which once allowed people to do things together - to look each other in the eye, to share a handshake, to share a beer – these things now often give place to solitary activities where groups of people can easily be found with no conversation or interaction occurring because they are all absorbed in their own electronic screen watching. Christian also noted that internet use disorder is now classified as a mental disorder in the Diagnostic and Statistical Manual of Mental Disorders.

This was a fascinating and entertaining lecture, thoroughly enjoyed by the audience. One thing on which everyone could agree is that there is a great deal more research needed in this field of continual increase in rates of mental illness. But looking after your relationships seems a very good place to start. Again from Dr Christian Heim, "*Lions do not roam our streets anymore, but loneliness and isolation do.*"

**Anne Wood FRSN**



# Queen's Birthday Honours for RSNSW Fellows and Distinguished Fellow

Congratulations to the following Fellows and a Distinguished Fellow of the Society who received awards in the recent Queen's Birthday Honours list:

## **Professor Katherine Belov AO FRSN**

For distinguished service to higher education, particularly to comparative genomics, as an academic and researcher.



## **Emeritus Professor Leo Radom AC FRSN**

For service to science, particularly to computational chemistry, as an academic, author and mentor, and to international scientific bodies.



## **Professor Michelle Simmons AO FRS FAA DistFRSN**

For distinguished service to science education as a leader in quantum and atomic electronics, and as a role model.



## **Dr Keith Suter AM FRSN**

For significant service to international relations and to the Uniting Church in Australia.



### Contacts for Your Officer Bearers and Council Members

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For further information: <http://www.royalsoc.org.au/>

# Schedule of RSNSW Events 2019

Date	Event	Speakers	Topics and Presentations	Location
7-Aug-19	Ordinary General Meeting	Prof Peter Shergold AC FRSN	Democracy under Challenge: How can We Restore a Sense of Citizenship?	State Library of NSW
12-Aug-19	National Science Week Talk 1	Dr Ragbir Bhathal FRSN	Aboriginal Astronomy	SMSA
13-Aug-19	National Science Week Talk 2	Em Prof Robert Llewellyn Clancy AM FRSN	Unexpected Results: Australian Science to 1950	SMSA
14-Aug-19	Poggendorf Lecture	Professor Robert F Park FRSN	Cereal Killers: How Plant Diseases Affect Food Security	University of Sydney
15-Aug-19	National Science Week Talk 3	Dr Josh Harle	Machine Aesthetics of the Human Body	SMSA
15-Aug-19	National Science Week Talk 4	Professor Mikhail Prokopenko FRSN	Complex Systems: Computer Modelling of Epidemics	SMSA
16-Aug-19	Sydney Science Festival	Prof Elizabeth Blackburn AC FAA FRS DistFRSN	The Telomere Effect	City Recital Hall
4-Sep-19	Ordinary General Meeting	A/Prof Hans Pols	History and Sociology of Medicine in South-East Asia	State Library of NSW
19-Sep-19	Clarke Lecture	Prof Emma Johnston AO FAA FRSN	tba	
2-Oct-19	Ordinary General Meeting	Prof Peter Godfrey-Smith	Other Minds	State Library of NSW
17-Oct-19	Women and Science	Anne Harbers	Electricity, Astronomy and Natural History	SMSA
6-Nov-19	Ordinary General Meeting	Professor Herbert Huppert	The Beginning of Weather Forecasting	State Library of NSW
7-Nov-19	RSNSW & Four Learned Academies Forum	tba	Making Space for Australia	NSW Government House
21-Nov-19	Women and Science	Em Prof Anne Green	An Accidental Radio Astronomer	SMSA
4-Dec-19	Ordinary General Meeting	Jak Kelly Award Winner	2019 Jak Kelly Award Presentation & Christmas Party	State Library of NSW