



The Bulletin 430

The Royal Society of New South Wales

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27 March 2019

For Your Diary:

18 April 2019

Southern Highlands Branch Lecture

Professor Richard Kemp

'The Psychology of

Eyewitness Memory'

(For more information, see p. 4)



Patron of The Royal Society of NSW

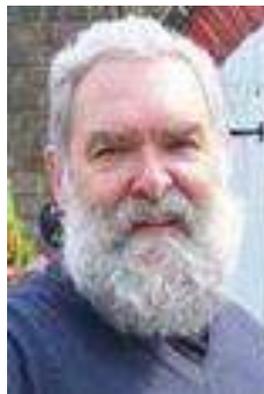
His Excellency General The Honourable
David Hurley AC DSC (Ret'd)
Governor of New South Wales

OGM, Open Lecture, AGM & Election of Council Members

'Measuring What We Can or How to Lose Weight on May 20th'

Wednesday, 3rd April 2019

**Emeritus Professor D Brynn Hibbert
AM FRSN**



See page 3 for more information

Date: Wednesday 3rd April 2019

Time: 5.30 for 6 pm start for AGM, followed by Open Lecture

Voting: Opens 5.30pm and closes at 6.15 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)

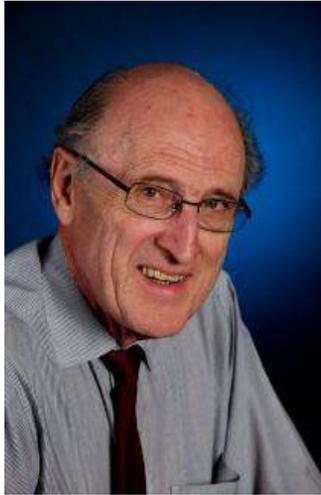
Dinner (including drinks): \$85 for Members and Associate Members,
\$95 for Non-Members.

Reservations: <https://nsw-royalsoc.currinda.com/register/event/57>

Enquiries: royalsoc@royalsoc.org.au Phone: 9431 8691

All are welcome.

From the President



Your Council devotes much thought to a key question: how can the Royal Society better serve its Members and Fellows and the broader community? We intend to keep doing the things we do already – the monthly meetings, the Annual Dinner, the Bulletin, the Journal, the joint lecture series with the Sydney Mechanics School of Arts, the Forum, the important awards given by the society, the special Lectures; and we hope to continue special activities such as the History of Science Tour to Europe (jointly with the State Library Foundation) later this year. But should we be doing more? Please feel free to email me with your ideas.

Here are some ideas and questions that Council has been thinking about. Given that the Royal Society has such rich intellectual resources among its Fellows and Members, should the Society set up study groups to tackle serious societal problems? One topic that has been suggested, of obvious long-lasting importance in Australia, is ‘Drought’. Should we be doing more to influence government policy on this and other issues? On a lighter note, would Fellows be interested in an occasional semi-social get-together (‘Thursday afternoon drinks’) at the State Library?

Planning for this year’s Forum (a joint event with the four scholarly academies taking place at Government House) is already well under way. Because of the location, and the joint nature of the event, the number of seats is necessarily severely limited. In order to make the proceedings more widely available, an advance this year will be that, as well as a printed record of the event in the Journal, the individual presentations will be made publicly available as edited videos.

Ian H. Sloan AO FAA FRSN
President
Royal Society of New South Wales
President@royalsoc.org.au

Em Professor Brynn Hibbert AM FRSN

‘Measuring What We Can or How to Lose Weight on May 20th’



Galileo said ‘Measure what is measurable, and make measurable what is not so’, which is a statement of how important measurement is, not just to science, but living as a human. I have spent much of my career measuring things in chemistry, and have become fascinated by why, what and how we measure. Whether it was the length of a Pharaoh’s forearm in 3000 BCE, or a ten-millionth of half a meridian in 1795, we have attempted to understand our world by first measuring it: its extent (length, area and volume), how much of it there is (mass, amount of substance), and duration (time). Modern phenomena of electricity, forms of energy, temperature and the brightness of light, have all been wrestled into submission by the metrologists.

I raise this now, because on May 20th 2019, World Metrology Day, we will witness a new turn of the metrological wheel, as the dear old kilo in Paris is retired in favour of a quantum mechanical definition in which the numerical value of the Planck constant is fixed. There will be other changes and in my talk I shall tell you whether we all weigh any different at 00:01 on May 20 than we did at 23:59 on May 19th.

Brynn Hibbert AM FRSN occupied the Chair of Analytical Chemistry at the University of New South Wales since arriving from England in 1987 until his retirement in 2013. His research interests are in metrology and statistics in chemistry, ionic liquids and electroanalytical chemistry, but he also does a sideline in expert opinion, scientific fraud and presenting science to the public. Long a member of IUPAC (International Union of Pure and Applied Chemistry) he has helped name elements, revise the SI units and write the terminology of chemistry. More recently he has become a go-to expert witness in matters of drugs (of abuse, and sports). He is the Past President of the Royal Society of New South Wales, and was made a member of the Order of Australia in 2018. He has published around 270 papers, 5 books and 3 patents.

2019 Events

Royal Society – Southern Highlands Branch

Date*	Event	Speaker	Topic	Location**
18-Apr-19	Public Lecture	Prof Richard Kemp	The Psychology of Eyewitness Memory	Mittagong RSL
16-May-19	Public Lecture	Dr Damian Wrigley	The Importance of a Seed Bank in Future Preservation of Plant Species	Mittagong RSL
20-Jun-19	Public Lecture	Prof Ken Baldwin	Nuclear Energy	Mittagong RSL
18-Jul-19	Public Lecture	Dr Christian Heim & Dr Caroline Heim	Understanding the Mental Health Crisis and How Your Relationships can Save You	Mittagong RSL
15-Aug-19	Public Lecture	Prof Rick Shine	Sequencing the Cane Toad Genome (DNA)	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.

Prof Richard Kemp

School of Psychology, UNSW

‘The Psychology of Eyewitness Memory’



In criminal investigations eyewitnesses often provide police with vital information leading to the identification of a suspect. However, a detailed examination of cases of wrongful conviction from the USA shows that, while providing compelling evidence, eyewitnesses can be mistaken. In this presentation I will describe how psychological research into eyewitness memory can be used to inform policy change to reduce the risk of erroneous conviction.

Using an interactive format, I will demonstrate the surprising fragility of human memory and describe research I have undertaken with colleagues to identify procedures that increase the risk of memory distortions, and measures which can be employed to safeguard against these risks. I will end by describing some challenges and opportunities for the future, including the increased use of machine face-recognition systems to monitor public spaces, and a new smartphone app developed in conjunction with police and designed to help witnesses provide detailed, accurate accounts of events.

Professor Richard Kemp is a cognitive scientist and forensic psychologist who seeks to apply research in the fields of human memory and perception to aspects of the legal system. His current research interests include identity verification and face perception, eyewitness memory, police interviewing and forensic science evidence. Richard has undertaken research in collaboration with a variety of partners, including State and Federal government agencies, police and emergency services, banks and financial service providers.

Report of the 1271st OGM

Wednesday 6th March 2019

Professor Katherine Belov

School of Life and Environmental Sciences, University of Sydney

‘Using Genomics to Conserve Australia’s Biodiversity’



In a fascinating and engaging presentation, Professor Belov focused on the work she and her team have been involved in to save the Tasmanian Devil from extinction. The Tasmanian Devil, which became extinct on the mainland 3,000 years ago, is the world’s largest remaining marsupial carnivore, but in 1996 it was observed that it was under attack from Devil Facial Tumour Disease (DFTD), an aggressive non-viral clonally transmissible cancer. The disease spread from the north-western part of Tasmania to colonies on the whole island, with a loss of more than eighty percent of the population.

At the time when Katherine was a PhD student, it was believed that marsupials had a primitive immune system. With the introduction of gene sequencing, her enduring interest became the study of the genetic foundation of disease resistance. Central to this is the study of the major histocompatibility complex (MHC), a group of genes that code for proteins found on the surfaces of cells that help the immune system recognize foreign substances. In Tasmanian Devils, one cause of the lack of resistance to DFTD could be that the cancer cells depress the activity of the MHC genes, but a second cause could be the lack of diversity in the Tasmanian Devil’s MHC genes. This led to a study of the genetic diversity in various colonies of Tasmanian Devils, with the result that there is a clear difference between colonies on the west coast and those on the east coast. This gave rise to a program of cross-breeding, and the resultant increase in genetic diversity has shown promise of halting the decrease in the population. The program of studying the disease resistance of marsupials is a major effort and with interesting implications also for humans. Professor Belov has a large team working with her which, interestingly, is composed almost exclusively of women. They currently have a population of 700 Devils in captivity, but the goal is to create a stable, enduring population in the wild.

The interest generated by the talk was demonstrated by the numerous searching questions, of which one was why is this happening just now? Professor Belov said that it has not been observed since colonization began, no human cause has been found, and a comparison with specimens from the mainland (in museums) shows that there has not been a reduction in genetic diversity – it has been low for thousands of years. So, a bit of a mystery?

Frederico Volpin Presents his 3-Minute Thesis on 'Pee-Cycling: Transforming Our Urine into Valuable Fertiliser'



Frederico Volpin receiving his Associate Membership Certificate from President Ian Sloan AO FAA FRSN

Sustainability in wastewater treatment is one of the major issues of this century. Rethinking our wastes as resources is crucial in meeting the increasing demand for water, fertilizers and energy that we need to support a world population that will soon reach 9 billion. On November 6th, 2018, the Bill & Melinda Gates Foundation joined global innovators, development banks, corporate partners, sanitation utilities and governments to host the first 'Reinvented Toilet' Expo in Beijing. Their aim is to accelerate the adoption of innovative, pro-poor sanitation technologies in developing regions around the world. This is because over 30% of the world population still does not have access to adequate sanitation and because there is a need for creating new, profitable sanitation markets that sustain progress toward global water and sanitation goals outlined in the United Nation's Sustainable Development Goals.

That is why Frederico Volpin has chosen to focus his PhD research in developing new technologies for the recovery and reuse of our wastes – especially of our urine. Specifically, his research focuses on the transformation of urine into a safe and odourless fertiliser. The winner of the University of Technology Sydney's 3MT competition, Frederico spoke at the March OGM on membrane separation and advance wastewater treatment technologies, with particular focus on technologies for the recovery and re-use of source-separated urine. Urine is an important source of phosphorus, and UTS is running a pilot plant for the recovery of phosphorus from urine in their Faculty of Engineering and Information Technology building. In response to a question, Frederico explained that urine now also contains increasing amounts of antibiotics which end up in the ocean, but that the technology also allows antibiotics and hormones to be separated out. After his three-minute presentation, he received his Associate Membership Certificate from the President.

Em Professor Brynn Hibbert AM FRSN Wins First Round for 'Iodine', his *Story from the Periodic Table*

The Royal Australian Chemical Institute has declared Brynn Hibbert the winner of the first round of their *Story from the Periodic Table* series. This marks the International Year of the Periodic Table and the 150th anniversary of its discovery. You can read Brynn's amusing and informative story about the discovery of Iodine at:

www.raci.org.au/events-awards/stories-from-the-periodic-table/iodine-by-brynn-hibbert

Report of 21 March 2019
Royal Society
Southern Highlands Branch

Susannah Fullerton OAM FRSN

‘Samuel Pepys: Diarist and President of the Royal Society’

It was John W. Gardner, Secretary of Health, Education and Welfare under President Lyndon Johnson, who is credited with the quote that *‘History never looks like history when you are living through it. It always looks confusing and messy, and it always looks uncomfortable’*.

It was clear from Susannah Fullerton’s address to her 85-person audience that Samuel Pepys did not share this view of history. The diary of Samuel Pepys has long been considered the greatest diary in the English language. Historians have found it invaluable, but as Susannah explained in this excellent lecture, the diary is also a superb work of literature and the record of an extraordinary man who delighted in faithfully recording in meticulous detail the events of the world he lived in.



Portrait of Pepys in 1666
by John Hayls

Pepys’ record is more than a million words long, and shows astonishing frankness concerning his own weaknesses and his personal life. His personal dealings are laid out for all to see, including his numerous amorous affairs and his fractious relationship with his wife. He wrote consistently on subjects such as his personal finances, the time he got up in the morning, the weather, and what he ate. His diary is a rare source of such details of everyday life of an upper-middle-class man during the seventeenth century.

Aside from commenting on his day-to-day activities, Pepys also described in detail the significant and turbulent events of the nation. Oliver Cromwell had died just a few years before Pepys began his diary, and the resultant political unrest was duly described by Pepys. He himself was on the ship that brought Charles II home to England. Then followed his firsthand account of events such as the coronation of King Charles II and the restoration of the British Monarchy to the throne, the Anglo-Dutch War, the Great Plague and the Great Fire of London.

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One of the great characteristics of the diary is the wonderful juxtaposition of the telling of the significant events of the nation alongside his personal recollections of that event. For example, in the early hours of 2 September 1666, Pepys was wakened by his servant who had spotted a fire in the Billingsgate area of London. Pepys decided that the fire was not particularly serious and returned to bed. When later he found that 300 houses had been destroyed and that London Bridge was threatened, Pepys set off to the Tower and other vantage points to get a better view. At noon, he went home before returning later in the day to watch the fire once more. He reported of his lunch that he had enjoyed ‘an extraordinary good dinner, and as merry, as at this time we could’ before returning to watch the fire once more. He described how in the furious face of the fire, desperate people were digging pits into which they were placing valuables for protection. He too partook in this curious attempt at saving his own goods reporting ‘...in the evening Sir W. Pen and I did dig another, and put our wine in it; and I my Parmazan cheese, as well as my wine and some other things’.



Old St Paul's Cathedral, destroyed in the Great Fire

Pepys did not wish to have his diary studied by his contemporaries, as evidenced by the fact that he recorded his thoughts and opinions in shorthand (a form devised by Thomas Shelton) and sometimes in a code of various Spanish, French and Italian words, especially when he was describing details of his illicit affairs. It is clear however that he wished future generations to see the diary as it was included in his library and catalogue, along with the shorthand guide he had used in its creation. He also set in place an elaborate plan before his death to ensure that the library and its contents remained intact for years to come. Pepys stopped writing his diary in 1669 because his eyesight had begun to trouble him. He feared that writing in dim light was injuring his eyes. In the end his fears were unjustified as he lived for another 34 years without going blind.



Pepys' Library, Cambridge, where Samuel Pepys' original diaries are held (www.magd.cam.ac.uk/pepys)

Report of the Annual Four Societies Lecture 2019

Helen Cook

GNE Advisory

‘Legal Considerations pertaining to Nuclear Energy as an Option for Australia’



The Annual Lecture of the Four Societies (Royal Society of NSW, the Australian Nuclear Association, the Australian Institute of Energy, and the Nuclear Panel of Engineers Australia (Sydney division)) was delivered by Helen Cook, an international lawyer with GNE Advisory. Helen has many years' experience advising on nuclear projects and transactions in the United Kingdom, the United States, Egypt, Turkey, the United Arab Emirates, Argentina, India and others, as well as liaison with the International Atomic Energy Agency. She is the author of a legal textbook *The Law of Nuclear Energy*.

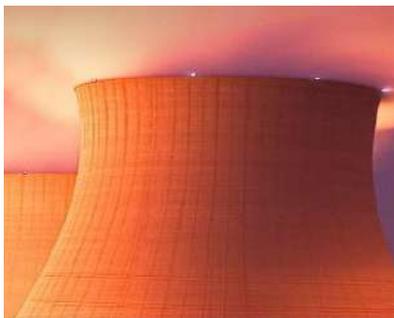
The general framework in which nuclear power plants can be established is covered both by international law and local legislation and regulations that reflect government policy. Considerations include the Nuclear Non-Proliferation Treaty, nuclear security, nuclear safety and emergency response and third-party liability issues. Helen reviewed several projects, particularly in the US and the UK. There have been two notable projects in the US. The expansion of the Vogtle plant in Georgia (adding two Westinghouse AP 1000 reactors) has suffered very substantial cost overruns (from US\$4.4 billion to US\$12.2 billion, including financing costs) and is running late. In South Carolina, two utility companies halted construction on nuclear reactors having spent more than US\$9 billion on the projects. In the UK, Hitachi is likely to cancel the £16 billion nuclear power station at Wylfa in Wales. It will almost certainly not proceed unless the UK government puts a multi-billion-pound investment into the project. Late last year, Toshiba wrote off £125 million it had already spent on a new plant in Cumbria. There is only one plant in the UK that looks like proceeding – the Hinkley Point C project in Somerset – but only under government subsidy and ownership.

Nonetheless, in the last couple of decades, there have been many nuclear power plants installed around the world. The most significant installations have been in China and others are planned in the Middle East, India and elsewhere. One of the biggest challenges that faces the nuclear industry is public perception and the strength of public resistance to the planning approval. This is not an issue in countries with tightly-controlled economies, such as China and many of the Middle Eastern countries. However, in Australia, the UK, most of Europe and North America this is a major barrier.

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How likely is it that a nuclear power plant will ever be built in Australia? Helen Cook outlined several major areas of risk: not least is the financing problem – nuclear power plants cost tens of billions of dollars, much more on a dollar-per-watt basis than coal combined-cycle gas or the major renewable technologies. There are also very substantial financial obligations with end-of-life decommissioning costs. In Australia, there would also be a ‘first of kind’ risk because we do not have the depth of technical skill to build a major nuclear plant. The project would have to be built by one of the major international companies (Hitachi, Toshiba, etc.) but these organisations are becoming far more cautious. This is influenced by the decision by Toshiba, the parent company of Westinghouse Electric company, to file for Chapter 11 bankruptcy protection for Westinghouse in 2017, following US\$9 billion of losses in nuclear construction projects. There is also the regulatory risk: with the first project, Australian regulators would almost certainly take an extremely cautious approach to granting an operating license. But the biggest risk for any promoter would be Australian government policy – would planning approval ever be granted? Public sentiment remains strongly anti-nuclear, so this would be complex, to say the least.



From the 2nd ed. of Helen Cook's book *The Law of Nuclear Energy*

The question that this lecture series raises is a far more practical one. As recently as five years ago, the nuclear power generation option looked attractive because of the contribution that it can make to reducing CO₂ emissions if nuclear plants were to replace all the ageing coal-fired power stations. However, this is no longer the case. The substantial cost reductions that have taken place in solar PV and storage technologies, particularly pumped hydro and batteries, now set to make these technologies economically viable without government subsidy. Furthermore, the cost of these technologies continues on a downward cost trajectory. In Australia, a much lower-risk strategy would be to meet our Paris Accord obligations with a combination of renewable generation technologies, supported by the appropriate mix of storage technologies.

In his book *The Structure of Scientific Revolutions*, Thomas Kuhn observed that when paradigms change, often there is a complete change in interpretation of the situation – almost like a switch in *Gestalt*. We are at that point now with renewable energy technologies. Kuhn also pointed out that during these periods of paradigm shift, the people who embrace the new paradigm are those who are new to the field or very young, with no preconceptions. It is much harder to shift paradigms in practitioners who have been wedded to a set of ideas, perhaps for decades. The paradigm change is complete when these practitioners leave the field. The reality is that nuclear energy generation in Australia is now a dead issue. It will take time for the recalcitrants to catch up.

Dr Donald Hector AM FRSN

‘Let’s build something brilliant’

A letter published in the Sydney Morning Herald, March 4, 2019

The Royal Society of NSW, Australia’s oldest scientific and cultural organisation, applauds the recommendation of the upper house’s parliamentary committee to retain the Powerhouse Museum at Ultimo (“State urged to put museum move on hold”, March 1), and to support a major new cultural institution at Parramatta. The right place for the Museum of Applied Arts and Science, the Powerhouse Museum, is where it is now, as an integral part of Sydney history, close to Sydney Observatory, Darling Harbour and universities, and well located as a rich educational and tourist resource. The Royal Society is excited that the report recognises the urgent need for renovation of the Powerhouse Museum, to make up for the years of neglect that have allowed this priceless asset to fall behind other science museums around the world. In planning the Parramatta museum, the needs and interests of Parramatta and NSW should be assessed, and an exciting and innovative museum then designed. We in NSW have, for example, no First People’s museum, nor a heritage and immigration museum. Such choices would be drawcards for locals and tourists alike, bringing a new audience to Parramatta. Instead of wasting funds moving a valuable existing collection to a new place, let’s use public funds to build something new and brilliant.

Professor Ian Sloan
President, Royal Society of NSW

New Fellows and Members

At the March OGM fellowships were awarded to Professor Medy Hassan, Chancellor Belinda Hutchinson AM, Commissioner Allan John Sparkes CV OAM, and Professor Brett Bowden, as well as welcoming new Associate Member, Erik-James Uytterhoeven-Spark. Congratulations to all!



Belinda Hutchinson AM, Chancellor of the University of Sydney, receives her certificate of fellowship from
RSNSW President Ian Sloan AO FAA FRSN

Vale Emeritus Professor Noel Hush AO DistFRSN



The Society was greatly saddened to learn that Emeritus Professor Noel Sydney Hush AO DistFRSN DSc FRS FAA FNAS FRACI, one of our inaugural Fellows (elevated to Distinguished Fellow when the new grade of Fellowship was introduced in 2012) died on Wednesday, 20 March 2019. He was 94.

Professor Hush was a chemist of international standing. After graduating from the University of Sydney, he worked there as a Research Fellow from 1945-49. He moved to Britain in 1950 and worked as a lecturer at the University of Manchester until 1954 in the department created by Michael Polanyi, and then subsequently moved to the University of Bristol, where he worked initially as a lecturer and subsequently as Reader in the Department of Chemistry. In 1971, he returned to Australia to establish the Department of Theoretical Chemistry, a group that he led for nearly 20 years until his formal retirement. The theme of the research program that he conducted throughout his entire life related to chemical electron transfer, the basis of oxidation-reduction processes that are found widely in nature both in inorganic and biological processes.

He received many Australian and international accolades including Fellowship of the Australian Academy of Science, the Royal Society (London) and the National Academy of Sciences of the USA.

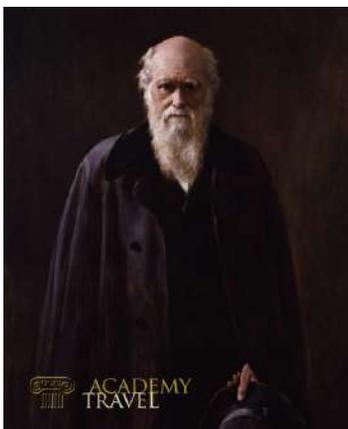
Noel's family requested a private funeral but a memorial service will be held in the Great Hall of the University of Sydney on Tuesday 28 May at 11 o'clock. An obituary to Noel will be published in the next edition of the Journal and Proceedings.

Dr Donald Hector AM FRSN
22 March 2019

The History of Science: Padua – Florence – Paris – London

A tour for the Royal Society of NSW in conjunction with the State Library of NSW Foundation

19 September – 4 October 2019



Overview

Explore the history of science from Vesalius in Padua, to Galileo in Florence and the flourishing of modern science in Paris and London. This 16-day private tour for the Royal Society of NSW in conjunction with The State Library of NSW Foundation includes guided visits to many exceptional museums, rare access to collections, libraries and archival material, and the expert guidance of specialists and curators. It follows the great story of modern science, taking you from Padua, to Florence, Paris and London and includes day trips to Bologna, Siena and Cambridge. A four-night pre-tour extension to Venice is also available.

Discover

- The birth of modern science, from Galileo's telescopes to Darwin's theory of evolution
- The history of medicine: Vesalius in Padua, Pasteur in Paris and the medical collections of London
- The transmission of knowledge, from rare books and manuscripts to the modern museum
- The history of the university at Padua, Bologna, Paris and Cambridge
- Interaction between the arts and sciences in moments of great change from the Renaissance to the modern world.

Tour Details

Dates: 19 September – 4 October 2019

Price: \$9,270 pp. twin share; \$2,280 single supplement

For more information and to register your interest contact: Academy Travel, 9235 0023
info@academytravel.com.au.

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The History of Science (contin.)

Tour Highlights

- Padua: the world's first anatomy theatre, the oldest botanic garden and Giotto's Scrovegni Chapel
- Special access to library collections in Florence, Paris and London
- Private tour of the Pompidou Centre, Paris' modern art museum
- Day trips to Siena, Bologna, Cambridge and Greenwich
- Specialist museums dedicated to Pasteur, Curie, Galileo & Darwin
- London science: from the manuscripts of the Wellcome Library to the National Science Museum.

Itinerary



Days 1–3: Arrive Padua; visit the world's oldest anatomy theatre and oldest botanic garden, visit Scrovegni Chapel, Giotto's masterpiece; day trip to Bologna.

Days 4–6: Explore Florence, including the Galileo Museum, Uffizi, and special access to rare collections; day trip to Siena and the wonderful cuisine of Chianti.

Days 7–10: Discover a different side of Paris, from special museums dedicated to Pasteur and Curie to a private tour of the Pompidou Centre.

Days 11–15: Arrive London. Enjoy visits to Down House, the home of Charles Darwin, the National Observatory and prime meridian at Greenwich, and a range of museums from the Museum of Natural History, to the private collection of the Royal College of Physicians; day trip to Cambridge.

Day 16: Departure.

Tour Leader

Emeritus Prof Robert Clancy AM FRSN has a distinguished career in medical research and has published books on the early mapping of Australia. He has led many similar successful expeditions. Expert guides will meet the group in each destination.

Maximum Group Size: 20

A Donation to the RSNSW Library



Following President Ian Sloan's donation of a book on his achievements and aspects of his life we have another one of our Fellows, Professor Geoffrey Harcourt, who has donated a copy of his memoirs. It is titled: *Reflections on a Representative Selection of My Essays from the Past 60 Years*.

The introduction begins:

'I turned 86 in June 2017. This meant that for two years I have had to live under the curse of 87 – first, in my 87th year and then, actually becoming 87 in June 2018. Australian Test cricketers dread their scores being on 87 and try either to bypass it and/or get off it as quickly as possible, often getting themselves out in the process. Why this dread? Because 87 is 13 years off a 100: it is the Devil's number. These two years of impending mortality inevitably concentrated my mind so I suggested to Palgrave Macmillan that I put together a representative selection of my essays from the past 60 years, directed especially to Australian readers, but also I hoped of interest generally. The response was positive. However, when preparing the selection I discovered that due to licencing and reuse restrictions of Francis and Taylor and Oxford University Press, I was not able to reprint 14 of the essays discussed in the Introduction. That would not have allowed me to maintain balance in selection, especially as some of the excluded essays punch above their weight. So I decided instead to write an article on the themes I intended the selected essays to illustrate.'

Dr Ragbir Bhathal FRSN

Hon Librarian

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Schedule of RSNSW Events 2019

Date	Event	Speakers	Topics and Presentations	Location
3-Apr-19	AGM & Ordinary General Meeting	Em Prof Brynn Hibbert AM FRSN	Address by the Ex-President: Measuring What We Can, or how to lose weight on May 20th"	State Library of NSW
2-May-19	Women and Science	Susannah Fullerton OAM FRSN	Ada Lovelace	SMSA
10-May-19	Annual Dinner RSNSW	Prof Michelle Simmons FRS FAA DistFRSN FTSE	Distinguished Fellow's Address: The New Field of Atomic Electronics	State Library of NSW
30-May-19	Women and Science	Prof Barbara Gillam FASSA FRSN	Visual Perception and Aboriginal Art of Papunya Tula	SMSA
tba	Clarke Lecture	Prof Emma Johnston AO FRSN	tba	
5-Jun-19	Ordinary General Meeting	Dr Kate Faasse	Psychology	State Library of NSW
20-Jun-19	Women and Science	tba	tba	SMSA
3-Jul-19	Ordinary General Meeting	Prof Robert Burford FRSN	History of Polymers	State Library of NSW
18-Jul-19	Women and Science	tba	tba	SMSA
7-Aug-19	Ordinary General Meeting	Prof Peter Shergold AC FRSN	Science and Politics	State Library of NSW
August	Poggendorf Lecture	tba	tba	
August	Science Week Talks	tba	tba	SMSA
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	Women and Science	tba	tba	SMSA
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	Prof Barbara Gillam FASSA FRSN	Visual Perception and Aboriginal Art	State Library of NSW
November	Dirac Lecture	tba	Physics	
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