



The Bulletin 415

The Royal Society of New South Wales

ABN 76 470 896 415

ISSN 1039-1843

25 October 2017

For Your Diary:

The Royal Society of NSW and
Four Academies Forum 2017

“The Future of Rationality in a Post-Truth World”

9 am – 5 pm, Wednesday, 29 November 2017

Registration 8:30 am

Government House, Sydney

See Page 3 for more information

Southern Highlands Branch
Public Lecture

Yik Lung (Jeremy) Chan

Effects of Maternal Cigarette Smoke Exposure

Thursday, 16 November 2017, 6:30 pm

Building 15/16, Chevalier College, Bowral

See Page 7 for more information

Joint Event with SMSA

Em Prof Robert Clancy

“The Freedom to Use Your Own Intelligence”

Monday, 6 November 2017

Mitchell Theatre, Sydney Mechanics School of Arts, 280 Pitt
St, Sydney, 6:00 pm for 6:30 pm (see p. 9)

Joint Event with UNSW: **Dirac Lecture**

Prof. Boris Altshuler

6:00 pm – 7:30 pm, Monday, 6 November 2017

Ritchie Theatre, John Niland Scientia Building, UNSW

(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

Open Lecture & OGM

Wednesday, 1 November 2017

Pamela Griffith FRSN

“Women Artists: Barriers and Frustrations”



See Page 8 for more information

Date: Wednesday, 1 November 2017; 6:00 pm for 6:30 pm

Venue: Union, University and Schools Club, 25 Bent Street, Sydney

Entry: \$10 for Members and Associate Members of the Society,
\$20 for Non-Members, which includes a welcome drink.

Dress: Business

Dinner (including drinks): \$80 for Members and Associate Members,
\$90 for Non-Members.

Reservations must be made at least 2 days in advance

Reservations: <https://nsw-royalsoc.currinda.com/register/event/38>

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

All are welcome.

From the President

I am not sure why I was so irked by former Prime Minister Abbott's comments in London last week, but hearing him once again bagging scientific consensus made me wonder why nations bother with universities, research institutes, and the like. So I was pleased to read the comments by Professor Steve Sherwood FRSN and others in the next day's *Guardian* <https://www.theguardian.com/environment/planet-oz/2017/oct/11/tony-abbott-dares-us-to-reject-evidence-on-climate-but-reveals-a-coward>, who sounded the complete voice of reason. Also in the recent news, Ross Gittins AM FASSA FRSN has been elected to the Academy of Social Sciences in Australia. Ross became a Fellow of the RSNSW in March of this year and will join our speakers at the Forum next month.

The recipients of the 2017 Nobel Prize in Physics (Rainer Weiss, Barry C. Barish and Kip S. Thorne, for work on gravitational waves) were possibly at shorter odds than the champion racehorse Winx commands, and it was excellent for world science that discovery of waves from the collision of two neutron stars in Hydra with spectroscopic confirmation around the globe, including Australia, had front page billing this month.

I trust we all watched the clever take on how the Great Barrier Reef might cope with global warming on *Catalyst* on October 3rd <http://iview.abc.net.au/programs/catalyst/SC1602H008S00>. Professor Emma Johnston FRSN took us through the evidence and possible solutions for coping with coral bleaching. This is the new incarnation of *Catalyst* and while we bemoaned the demise of its former glories, choosing a high-profile local scientist to front the whole program worked, in this instance, tremendously well. By the end, we all wanted to know what Professor Johnston would advise the Great Barrier Reef Marine Park Authority to do. If you haven't seen the denouement catch it on iView.



See also the professor's comment <http://www.smh.com.au/comment/the-amazing-biological-fixes-that-could-help-save-the-great-barrier-reef-20170930-gyrzad.html>.

Do consider coming to the November Ordinary General Meeting at which Pamela Griffith FRSN will talk on "Women artists: barriers and frustrations". Ms Griffith is an artist, designer, master printer and author. She has painted a splendid portrait of Dame Marie Bashir AD CVO DistFRSN, and is contemplating making a portrait of your esteemed President.

Monday 6th November is a busy evening with Professor Robert Clancy giving the second in the Enlightenment talks at the SMSA (see elsewhere in the Bulletin), and unfortunately at the same time over at UNSW the Dirac Lecture in Physics. The Dirac Lecture is co-sponsored by the RSNSW and over the years we have heard from the top Physicists of the age. This year, the lecturer is given by Professor Boris Altshuler of the Department of Physics, Columbia University. Unfortunately I shall miss both lectures being on duty at a graduation ceremony at UNSW, where I defend the person of the university chancellor as Mace Bearer.



Photo: Ambassador Productions

As usual, please write with comments and suggestions to president@royalsoc.org.au.



THE ROYAL SOCIETY OF NSW AND FOUR ACADEMIES FORUM 2017

Hosted by:

His Excellency General The Honourable David Hurley AC DSC (Ret'd)
Governor of NSW and Patron of the Royal Society of NSW

“The Future of Rationality In a Post-Truth World”

Date: Wednesday, 29 November 2017, 9:00 am – 5:00 pm
(8:30 am registration)

Government House, Sydney

Places are limited: Please contact president@royalsoc.org.au to determine availability.

This year’s Forum will discuss the implications of the rise of a “post-truth” approach to shaping public opinion. Does it have the potential to undermine the institutions upon which open, democratic societies are built? Does it advantage the propagandists and those who wish to pursue sinister agendas? What public responsibilities do the traditional and emerging media have? What should – or can – those who believe in evidence-based, objectively-determined policy do about it?

Distinguished scholars from Australia, New Zealand, and England will address the following topics:

- Rationality and post-truth: the threat to democratic society -Dr Donald Hector AM FRSN
- Wind Turbine Syndrome: a communicated disease - Prof Simon Chapman AO FASSA
- The Brexit experience: evidence, expertise and post-truth politics - Prof James Wilsdon
- Role of evidence and expertise in policymaking - Sir Peter Gluckman FRS
- Influences on evidence... putting the cart before the horse - Prof Lisa Bero
- Why are scientists so quiet? ... the public voice of the scientist - Prof Emma Johnston FRSN
- Algorithms of hate: how the Internet facilitates racism ... - Prof Andrew Jakubowicz
- Mind and language in the post-truth era - Prof Nick Enfield
- Rapporteur summary - Paul Griffiths

Professor Pip Pattison “The Science of Social Networks”

Prof. Pattison started by explaining the importance of social networks – we lead relational lives, and these relations create structures within society that both constrain and enable our activities. She then introduced network theory, in particular, the existence of simple networks of only a few nodes, and how these can be extended to larger networks by certain rules regarding their relationships.

She discussed how these ideas could be related to real social networks using data obtained through various types of network schemes. The resulting quantitative models can be used to analyze activities taking place within them, such as propagation of diseases or the efficacy of prevention strategies. As an example, Prof Pattison described a case study of injecting networks and HCV transmission.

The talk was followed by 15 minutes of Q&A, demonstrating how the presentation had resonated with the audience.



2017 Dirac Lecture Professor Boris Altshuler Department of Physics, Columbia University

Date: Monday 6th November 2017: 6:00 to 7.30 pm
Venue: Ritchie Theatre, John Niland Scientia Building, UNSW

Professor Altshuler will lecture on his specialty of theoretical condensed matter physics, which concerns the understanding the physical behaviour of matter in solid, liquid, and other states in which particles adhere to each other.

Trained in Leningrad (now St. Petersburg), he worked there until moving to MIT in 1989 and then to Princeton University in 1996. Recently, Prof. Altshuler has joined the faculty of Columbia University.

The Dirac Medal for the Advancement of Theoretical Physics is awarded by UNSW in association with the Australian Institute of Physics NSW branch and The Royal Society of NSW. The Lecture and the Medal commemorate the visit to UNSW in 1975 of the British Nobel laureate, Professor Paul Dirac.

Registration: <https://www.science.unsw.edu.au/events/dirac-lecture>

Report of Public Lecture Southern Highlands Branch

28 September 2017

Professor Peter Schofield

“Biomarker changes in inherited Alzheimer’s Disease”



Dementia describes a syndrome associated with a range of diseases which are characterized by the impairment of brain functions including language, memory, perception, personality and cognitive skills. Alzheimer’s disease characteristically begins with memory problems (medial temporal lobe). It also commonly affects language and speech, orientation (getting lost, losing track of time) and domestic tasks and self care such as dressing and bathing. Usually the personality is preserved however.

Professor Schofield noted that the order and magnitude of changes leading to Alzheimer’s disease are not well understood because the disease develops over many years. Autosomal dominant Alzheimer’s disease has a predictable early age of onset and provides an opportunity to determine the sequence and magnitude of the pathologic changes that culminate in symptomatic disease. The Dominantly Inherited Alzheimer’s disease Network (DIAN) is an international collaborative study which has mapped these changes over many years using clinical, cognitive, biochemical and imaging biomarkers of Autosomal dominant Alzheimer’s disease. The results of Peter Schofield and his team show that there is a defined sequence of brain changes which can be seen up to twenty years before clinical symptom onset. Using this knowledge, the DIAN Trials Unit has launched clinical trials targeting the prevention of symptom development in Alzheimer’s disease.

A very interesting case of Alzheimer’s disease gene mutations was presented by Professor

Since the late 1800s, Australian life expectancy at birth has increased by 27% per annum. As “Western” countries have become richer, healthier and older, the causes of death and disability have changed. For example in 1922, infectious diseases caused 15% of deaths at an average age of 27 years; by 2011, these numbers had changed to 2% of deaths at an average age of 75 years. In the 20th century, systemic body diseases such as cardiovascular and respiratory conditions, cancer and diabetes were seen to rise in mid-life. As health improved, disease was delayed to older ages. Now in the 21st century, more people live to very old ages (80+), and medical conditions such as brain disease, dementia, stroke and falls are rapidly emerging.

Continued on page 6

Southern Highlands Branch

Report of 19 October 2017

Professor Dean Rickles

“The Renaissance of General Relativity: The Role of Private Patronage and Anti-Gravity”



This most unusual lecture tracked the remarkable story of how general relativity (Einstein’s theory of gravitation and space time) went from a neglected backwater in the 1930s and 40s to a central part of modern physics. The transition was much aided by two unlikely philanthropists, the (impossible) promise of anti-gravity, and a military keen to obtain the gravitational equivalent of the atom bomb.

Professor Dean Rickles is Professor of History and Philosophy at the University of Sydney where he is also an Australian Research Council Future Fellow and co-director of The Centre for Time, which investigates time across various disciplines. His research focuses primarily on quantum gravity and the physics of spacetime. Books which he has written in this area include *A Brief History of String Theory: From Dual Models to M-Theory*. (Springer, 2014), and soon to appear, *Covered in Deep Mist: The Development of Quantum Gravity, 1916-1956* (Oxford University Press, 2018). Professor Rickles’ research publications are vast in number. His leisure time as a pianist and amateur musicologist literally brings him back to earth.

For the 60 person audience, the lecture provided an interesting insight into relativity and a whimsical look at the promises of the impossible. Perhaps a more important outcome of the lecture was the audience realization of how far we have come in a short time from the general relativity low water mark of the 1940s. An unusual and inspiring lecture.

Anne Wood FRSN

Continued from Page 5 **Alzheimer’s Disease**

The patient concerned was a woman, Auguste Deter, who was seen by Dr Alois Alzheimer in 1901. The patient was then in her early fifties. She had memory loss, hallucinations and was unable to perform simple cognitive tasks. In 2013 it was confirmed that she had a presenilin gene mutation.

Question time at the conclusion of the lecture had to be extended to address the numerous questions that were raised by the 65 person audience. The number of people with dementia in Australia has soared to more than 400,000, almost 139,000 in NSW alone, with

an estimated cost to the community of more than \$14 billion this year. A new report has found that this number will climb by another \$4 billion in just eight years as the number of people living with the condition continues to rise dramatically.

The timing of Professor Schofield’s lecture on September 28 happily coincided with the September Dementia Awareness Month in NSW.

Anne Wood FRSN

Southern Highlands Branch – November Speaker

Yik Lung (Jeremy) Chan

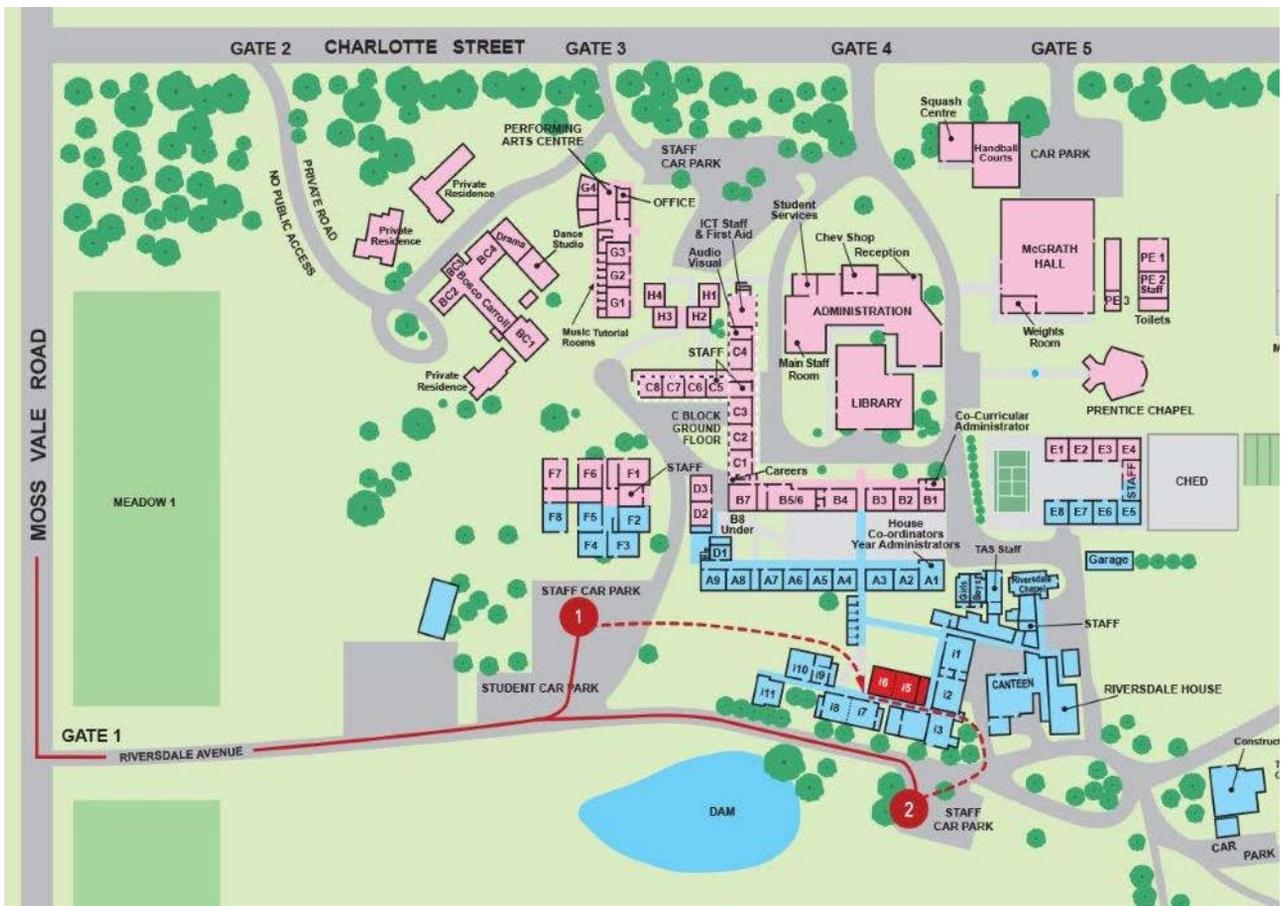
“Effects of Maternal Cigarette Smoke Exposure”

Thursday, 16 November 2017, 6:30 pm

Building 15/16, Chevalier College, Bowral

Change in Location of Lectures

The President of the Southern Highlands Branch, Mr. Hub Regtop, has announced that, for the remainder of 2017 and all of 2018, the public lectures will continue to be held at on the campus of Chevalier College but moved to class rooms designated **15/16**. The former venue at the Chevalier Performing Arts Centre will be undergoing renovation. The branch is grateful for the continuing support of the College. For people wishing to attend a lecture, enter through Gate 1 on Moss Vale Road. Then, go to Staff Car Park 1 or Staff Car Park 2. From there, follow the dotted red lines as shown on the map below.



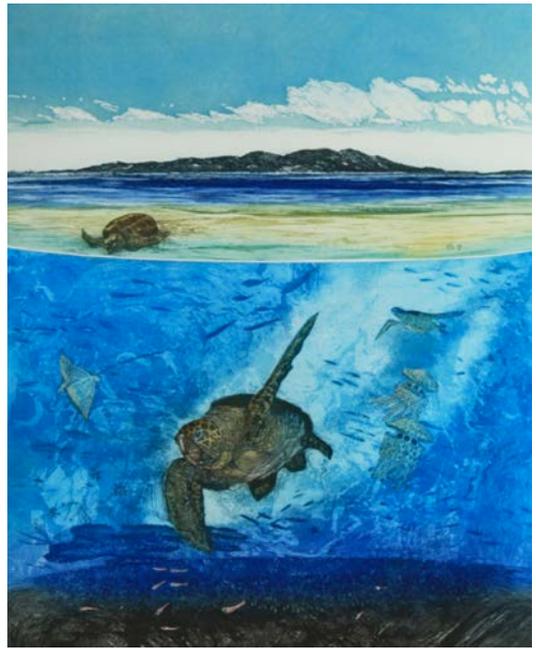
Pamela Griffith FRSN

“Women Artists: Barriers and Frustrations”

On 1 November, Pamela Griffith FRSN will share some of the joys and challenges she has encountered as a female artist. Her talk will be illustrated by images of her work and some works of women artists of the past.

Females are often the model and rarely the artist and this has led to some offensive and exploitative works around the female subject matter that have coloured the way people see women in art. It has also affected how women see themselves. Pamela speculates on where historically female artists acquired their training and how they were assisted to have an art career by their families and patrons. She shows how they overcame social difficulties and barriers to making art. She tracks what happened to their art.

This presentation will attempt to explain art history’s omissions of almost all women from its canon. There is an ongoing resistance of art museums to buying art made by women. Few women have solo shows before they are dead. Most women who go to art schools and make up the majority never have their work displayed in many big museums or bought for major collections. Does this mean that women at art schools are wasting their time?



Pamela Griffith is an artist, designer, master printer and author. She has had over 100 one-woman exhibitions in over 30 galleries. Her work is included in National, State and Regional Gallery collections across Australia and in major corporate and private collections in Australia, Europe, USA and Asia. Major commissions include Bicentennial and Macquarie toiles; Mary McKillop toile; portraits of distinguished Australians such as Dame Joan Sutherland, Richard Bonyne, Sir William Dean, Cardinal George Pell, Professor Marie Bashir and Elena Kats-Chernin; numerous etching editions for corporations including Qantas, Comalco, Department of Prime Minister and Cabinet. She is also the author of over 80 articles and 2 books on art.



The Square Kilometre Array (SKA) radio telescope will explode our ability to explore, map and ‘discover’ our Universe by a factor of more than 3000. For information and registration, go to this website:

https://www.atse.org.au/content/events/Event_Display.aspx?EventKey=1711SNSWL

Luncheon Forum and Discussion
“New discoveries, challenges and opportunities with the Square Kilometre Array”

12:00PM, MON 13 NOVEMBER, 2017 -
UNION, UNIVERSITY AND SCHOOLS CLUB

“The Freedom To Use Your Own Intelligence”

The Second Lecture in the RSNW and SMSA Joint Lecture Series:
Is the Enlightenment Dead?

Emeritus Professor Robert Clancy AM FRSN

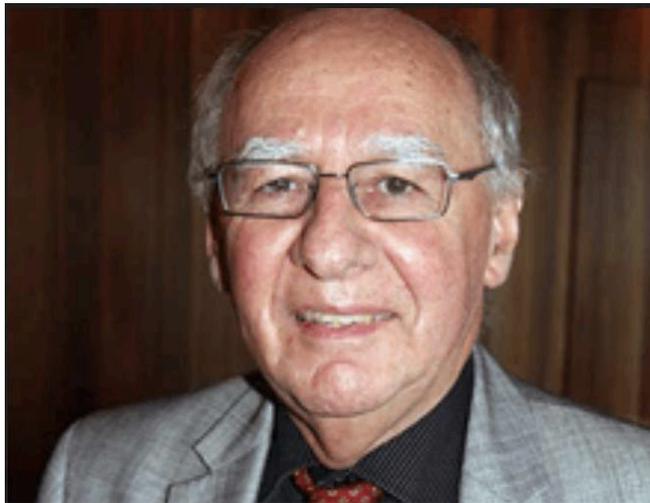
6.00 pm for 6.30-7.30 pm, Monday, 6 November 2017

Mitchell Theatre, Level 1, 280 Pitt St, Sydney

Sydney Mechanics School of Arts,

Cost: \$15 Fellows/Members, \$20 Friends (per Lecture)

Register for Lecture here: <https://nsw-royalsoc.currinda.com/register/event/43>



Have you ever pondered over the observation that in little more than a century, a gaol established in Sydney Cove with 1000 souls, joined the International stage as an independent Federated nation of in excess of three million – an unprecedented event in the history of man!

This presentation explores the theme that the convict settlement was the “perfect storm” to test the idea that the Enlightenment with its roots in late Middle Age Europe, and finding its expression in the Laws of Newton and the logic of Locke, created a confidence and capacity for humanity to achieve a new potential.

I explore first, the influence of the dominant contemporary ideas in science as introduced by James Cook and Joseph Banks and how this plays out in a young Australia in its impact on patterns of scientific development. Second, the self-belief and “have go” mentality reflecting John Locke’s optimistic view of men and women forced to face and control extraordinary challenges not just to survive, but to create a new and independent society, based on science and the goodness of man.

The question today is “have we lost that spirit of the Enlightenment to reactive conservatism?”

New Fellows and Members

At the October OGM, our President welcomed new Fellows and Members with a presentation of their certificate. They included our speaker, Professor Pip Pattison FRSN, who is pictured on page 4. Thank you to Dr. Don Hector for the photos of Prof. Pattison and below.



Prof. Michael McDaniel
FRSN



Prof. Duncan Ivison
FRSN



Prof. David Levinson
FRSN



Dr. Philip Norrie FRSN with the
Society's President Em. Prof.
Brynn Hibbert



Winnie Leung
Member



Kirsty Evans
Associate Member

Schedule of RSNSW Meetings 2017

Date	Event	Speaker	Topics and Presentations	Location
1-Nov-17	Ordinary General Meeting	Pamela Griffith FRSN	Women in Art	Union, University & Schools Club
29-Nov-17	2017 Forum	Many Distinguished Scholars	The Future of Rationality in a Post-Truth World	NSW Government House
6-Dec-17	Ordinary General Meeting	Jak Kelly Award Winner	2017 Jak Kelly Award Presentation & Christmas Party	Union, University & Schools Club

RSNSW - Southern Highlands Branch

Date*	Event	Speaker	Topic	Location**
16-Nov-17	Public Lecture	Yik Lung (Jeremy) Chan	Effects of Maternal Cigarette Smoke Exposure	Chevalier College, Bowral

*Lectures are usually the third Thursday of each month, except September. **Location may change

RSNSW & The Sydney Mechanics School of Arts

Date*	Event	Speaker	Topic	Location**
6-Nov-17	Public Lecture	Em Prof Robert Clancy	The Freedom to Use Your Own Intelligence	Sydney Mechanics School of Arts***
1-Feb-18	Public Lecture	Kim Mckay	Learning, Adaptation and the Enlightenment: The Museum	Sydney Mechanics School of Arts***
1-Mar-18	Public Lecture	Paul Brunton	Learning, Adaptation and the Enlightenment: The Library.	Sydney Mechanics School of Arts***
5-Apr-18	Public Lecture	George Paxinos	Sophistry: "Global Deflation: The Enlightenment has Failed!"	Sydney Mechanics School of Arts***

***Mitchell Theatre, Level 1, Sydney Mechanics School of Arts, 280 Pitt St, Sydney

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