



The Bulletin 408

The Royal Society of New South Wales

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28 March 2017

For Your Diary:

20 April 2017

Southern Highlands Branch Lecture

Dr. Michael Kennedy

**Post-Mortem Drug Studies: What happens
to drugs after death**

6:30 pm start

Venue: For up-to-date information, see
[http://www.royalsocietyhighlands.org.au/
lectures/lectures_2017.htm](http://www.royalsocietyhighlands.org.au/lectures/lectures_2017.htm)

3 May 2017

RSNSW Annual Dinner

Distinguished Fellow's Lecture:

Hon Em Prof Peter Baume AC DistFRSN

Don't blame the unemployed

6:30 for 6:45 pm

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

Dinner and drinks: \$125 Members,
\$135 Guests and Non Members

Dress: Black tie

Registration: <https://nsw-royalsoc.currinda.com/register/event/34>

Note: places are limited

Deadline for Reservations: 28 April



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

AGM & OGM

Wednesday, 5 April

“The Science of Beer”

Dr Greg Organ

Senior Sensory Specialist Lion Company



For more information, see page 3

Date: Wednesday, 5 April 2017: 5:45 for 6:00 pm AGM

6:30 pm OGM and Open Lecture

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.

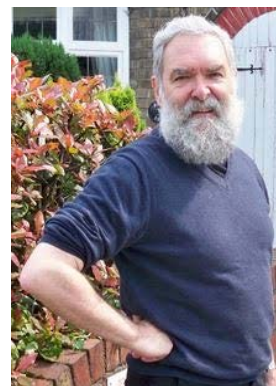
Reservations must be made at least 2 days in advance

Reservations: <https://nsw-royalsoc.currinda.com/register/event/31>

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

All are welcome.

From the President



As I look forward to the Annual General Meeting on April 5th I am feeling quite comfortable about my first year as President, built on the back of enormous amount of time and effort by the group of Councillors and members of committees. We have added to our membership very nicely, particularly recruiting fellows in ‘... Art, Literature and Philosophy’. To mention just three from our recent elections, I welcome artist Pamela Griffith FRSN, the writer Tom Keneally AO FRSN, and the philosopher Paul Griffiths FRSN as Fellows. We continue to grow and the Fellows Committee under Ian Sloan AO FRSN is grappling with the interpretation of our criteria when applied to leaders of society outside academia. Great OGM talks, successful joint lectures and, of course, the RSNSW and Four Academies Forum, held in November 2016, have all made for a very active year.

Our Fellow Nalini Joshi FRSN, a professor of mathematics and one of the very few women holding a chair (only 8 % of professors of mathematics in Australia are women), has had her portrait painted by artist Celeste Chandler. In a speech she gave on International Women's Day, when her portrait was unveiled in the University of Sydney's MacLaurin Hall, (the first of a woman to be hung there), Nalini said “My main message is that talent is blind to gender, sexuality, identity, background and race”.

Speaking of the achievements of RSNSW women, I reported in October last that Michelle Simmons Dist FRSN had been named as one of five global laureates of L'Oreal-UNESCO's “For Women in Science” program. Today (23th March, as I write this column) she received her prize of €100,000 at a ceremony in Paris . Drinks are on Michelle when she gets back! Our 2016 Edgeworth David Medallist, Muireann Irish, who will receive her medal from our guest of honour His Excellency General The Honourable David Hurley AC DSC (Ret'd) at the Annual Dinner on Wednesday May 3rd has also

been honoured as one of the L'Oreal-UNESCO's program's 15 “international rising talents” at a Paris dinner this week.

To complete this list of talented women, Associate Member Marian Kernahan has had a play she co-wrote (with five other women) open in Sydney to sell out audiences and amazing reviews . The Laden Table challenges ‘dinner table racism’ focussing on a Jewish family and a Muslim family in Sydney today.

Meanwhile the Register of Cultural Organisations will not include the Royal Society of New South Wales anytime soon. Our application was rejected on the grounds that “the organisation is not a 'cultural organisation' as defined at section 30-300 of the Income Tax Assessment Act 1997”. Also in the judgement was “I do not accept that science is a 'performing art’”, clearly not having been to some of our more exciting OGMs. The underlying problem is that ‘culture’ is only defined by the forms that are in the Act defining the principal purpose of an organisation, namely “the promotion of literature, music, a performing art, a visual art, a craft, design, film, video, television, radio, community arts, arts of Indigenous persons or movable cultural heritage”, and despite having “...Art, Literature and Philosophy” in our remit, science was deemed as our principal purpose.

(Continued on page 7...)

“The Science of Beer”

Dr Greg Organ

Join us to explore the science of beer. We begin with a description of beer’s four ingredients – yeast, water, malt and hops – and the brewing process.

To fully enjoy your beer you need to fully use your senses. The talk then moves to describing the role of each of the senses. The basics of sensory science are discussed to illustrate how the senses can be used to gain scientifically valid information. The sensory properties of the main flavours of beer and some simple chemistry are next discussed.

The talk concludes with a brief mention of Lion’s marketing campaign “Beer The Beautiful Truth”. During the talk some practical hints as to how to enjoy your beer at its best are included.

Dr. Greg Organ is the Sensory Specialist for Lion. After gaining a PhD in Inorganic Chemistry at the University of Sydney, he worked for two years at the Research School of Chemistry, Australian National University. After this, he made a major change in research area and worked for two years on the chemistry and sensory evaluation of wine at the Australian Wine Research Institute, Adelaide

Since then, he has been the sensory and flavour scientist for Lion for nearly thirty years. He is responsible for the training, procedures, and operation of all of Lion’s sensory evaluation panels. He also does the more complex flavour analytical work for Lion plus some research work into the flavour chemistry of beer. He is well known within the Australian and New Zealand sensory science community and made many presentations to a wide range of groups on beer science.



Types of Beer: A Beginner’s Guide

Your editor’s approach to beer has been to drink whatever is on offer and then look around for more. In anticipation of Dr. Organ’s talk, he thought it would be wise to discover what the major categories of beer are. Here is a beginner’s guide with thanks to www.webstaurantstore.com.

All beers are either ales or lagers. Ales are made with yeast that ferments throughout the beer mixture and ultimately settles at the top of the liquid. In contrast, lagers are made with yeast that ferments at the bottom of the beer mixture. The yeast used in ale production has a higher tolerance to alcohol and ferments at warmer temperatures when compared to the yeast used to make lager.

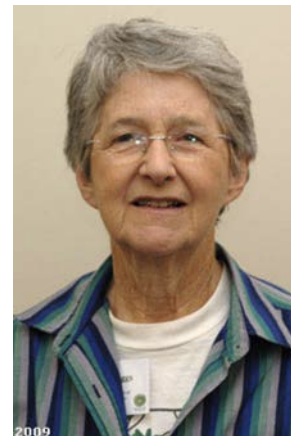
As well as the named ales, top-fermented beers include porter, stout, Belgian style beer, and wheat beer. Bottom-fermented beers include lagers, pilsners, and German-style bocks.

Report of 16 March 2017 Meeting

Royal Society – Southern Highlands Branch

Dr. Barbara Briggs, Honorary Associate,
Royal Botanic Garden, Sydney

“Two hundred years of the Royal Botanic Garden Sydney, Australia’s oldest continuing scientific institution”



In 2016, the Royal Society of NSW was 150 years old, but that year was also the 200 year anniversary of Australia’s oldest continuing scientific institution, the Royal Botanic Garden Sydney. Botany featured early in the in the young settlement, largely due to Joseph Banks and Botany Bay. From the first settlement of Sydney, plants were cultivated at Farm Cove, however the foundation of the Botanic Garden is marked as the “particular and *auspicious* day” when Mrs Macquarie’s Road was completed on 13 June 1816.

Barbara Briggs’ mused that she has been associated with the Botanic Gardens for over 50 years, or one quarter of its history. Her career has been as a botanist and for many years as Senior Assistant Director, heading the science programs of the National Herbarium of NSW at the Garden. Her studies have been on the evolution and classification of several of Australia’s major plant families, with DNA data now being used to develop hypotheses of evolutionary relationships. She has published over 100 research papers and named 80 new species, as well as reclassifying others. In 1994, she was awarded the Clarke Medal of the Royal Society of NSW.

The National Herbarium of NSW where Dr Briggs headed the science programs for many years was created in 1901 by Joseph Henry Maiden (1859-1925), another prolific writer and researcher. He had been appointed Director of the

Botanic Garden and government botanist in 1896. Included in his numerous publications were 45 papers published in the *Journal and Proceedings* of the RSNSW. He was a long-term council member of many learned societies in Sydney, becoming President of the Royal Society in 1906 and 1911. He too was a recipient of the Clarke Medal.

While much has changed over the decades, science at the Garden still has important roles in maintaining the National Herbarium of NSW, our archive of botanical specimens, and in providing botanical information in enquiry services, publications and on-line. The role of the Garden has also expanded over the years with two satellite gardens and education programs, and it is highly valued for its beauty, its attractive site, its horticulture and heritage, and as a green space for the city. Sydney is fortunate that in the early days of the colony, infertile soils forced a move of farming to Parramatta, leaving Farm Cove to become Sydney’s premier garden.

Latest research at the Garden has seen the development of DNA data as a powerful tool in botanical research, computerized data analysis, on-line data bases and increased collaboration with botanists in other organizations and countries worldwide. Dr Briggs presented many cases of surprising classification findings that have resulted from recent DNA analysis of well known plants. A particularly interesting case has

(...Continued on next page)

2017 Events

Royal Society – Southern Highlands Branch

Date*	Event	Speaker	Topic	Location**
20-Apr-17	Public Lecture	Dr Michael Kennedy	Post mortem drug studies: What happens to drugs after death	Chevalier College, Bowral
18-May-17	Public Lecture	Prof Gregg Suaning	The Bionic Eye	Chevalier College, Bowral
15-Jun-17	Public Lecture	Dr Michael Birrell	Luxor Temple: the shrine of Amun-Re	Chevalier College, Bowral
20-Jul-17	Public Lecture	Dr Wes Stein	Solar Power Generation	Chevalier College, Bowral
17-Aug-17	Public Lecture	Hugh MacKay AO	The changing place of religion in Australia	Chevalier College, Bowral
21-Sep-17	Public Lecture	Prof Peter Schofield	Alzheimer's Disease	Chevalier College, Bowral
19-Oct-17	Public Lecture	Prof Dean Rickles	Quantum Gravity	Chevalier College, Bowral
16-Nov-17	Public Lecture	Yik Lung (Jeremy) Chan	Effects of Maternal Cigarette Smoke Exposure	Chevalier College, Bowral

*Lectures are the third Thursday of each month. **Location may change due to renovations

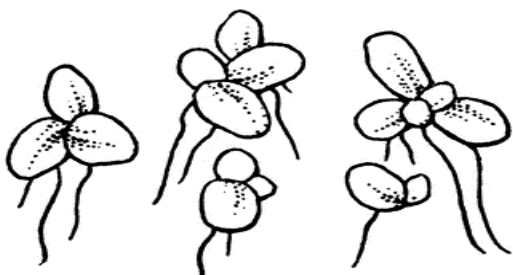
(Continued from previous page)

Dr. Barbara Briggs

been the discovery that tiny duckweeds are related to the arum lily. This was suspected 180 years ago. Now they are officially included in Araceae.

The evening of Dr Brigg's lecture was one of torrential rains in the Southern Highlands. Despite the fact that many roads were closed due to flooding, an audience of 40 managed to attend this outstanding lecture. Barbara closed her lecture with the startling statistic that in the years 2005-2009 alone, 9932 new plant species were found worldwide. Not surprisingly, a very long question time ensued.

Anne Wood FRSN



Duckweed

Report of the 1251th OGM

Wednesday, 1 March 2017

“Creative Minds: Artistic and Scientific Endeavour on Polar Expeditions 1851 to 1951”

Richard G Ferguson FRGS
Executive Director, Craft Victoria



Richard Ferguson, who has been involved in the cultural, heritage and education sectors for more than 30 years in both Australia and England, presented on the artistic and scientific endeavour on polar expeditions 1851 to 1951. Richard’s particular area of interest is the use of photography on polar expeditions. For this, he researched Antarctic field work on five expeditions with the Australian Antarctic Division and commercial operators. The focus of his talk was on the importance of the interdisciplinary nature of recording scientific work, here exemplified by the cooperation between artists and photographers. He presented an overview of artistic endeavour on early scientific expeditions such as those of Cook / *Endeavour* 1768, 1771, Baudin / *Geographe* 1800 - 1803 and Fitzroy / *Beagle* 1831 - 1836, and how this directly influenced the application of photography on polar expeditions.

Besides many interesting anecdotes and insights from his work, Richard also mentioned the preparations for the 250th Cook anniversary in 2020. The talk’s ensuing discussion raised the point on interdisciplinarity and the cooperation between artists and photographers. Richard believes that the interdisciplinary nature of recording scientific work is still true today, even with the advent of digital photography

Judith Wheeldon AM FRSN delivered the vote of thanks, pointing out how the lecture had demonstrated the importance of communities of knowledge, and how this would also be the focus of the Royal Society’s contribution to the 2020 Cook celebration, by exposing the considerable knowledge present in the Aboriginal community at the time of Cook’s visit to Australia in 1770. She also compared the duality of science and art with that of facts and passion. She noted that exploiting this duality was an important approach to teaching science to young children.



Liversidge Lecture – A joint RACI and RSNSW event “Sensing Our World: From Glucose Sensors to Counting Single Molecules and Cells”

Scientia Professor J. Justin Gooding, FAA, FISE, FRSN, FRACI, FRSC

5:50 pm light refreshments for 6:30 pm start

Thursday, 11 May 2017, Tyree Room, John Niland Scientia Building

(....Continued from page 2)

From The President

Len Fisher FRSN will be doing an Ockham's Razor on this soon, where he will draw parallels with C.P. Snow's the Two Cultures (Science and Art). Never fear, benefactors can still give a tax-deductable donations to our library and to our awards.

Finally, please do join us at the Society's Annual Dinner on May 3rd celebrate our awardees and listen to Peter Baume AC Dist FRSN give the Distinguished Fellows Lecture "Don't blame the unemployed".

Brynn Hibbert FRSN

For links to events mentioned herein, see below:

<http://www.smh.com.au/comment/the-subtle-trap-for-female-academics-is-still-an-enduring-reality-20170310-guve8o.html>

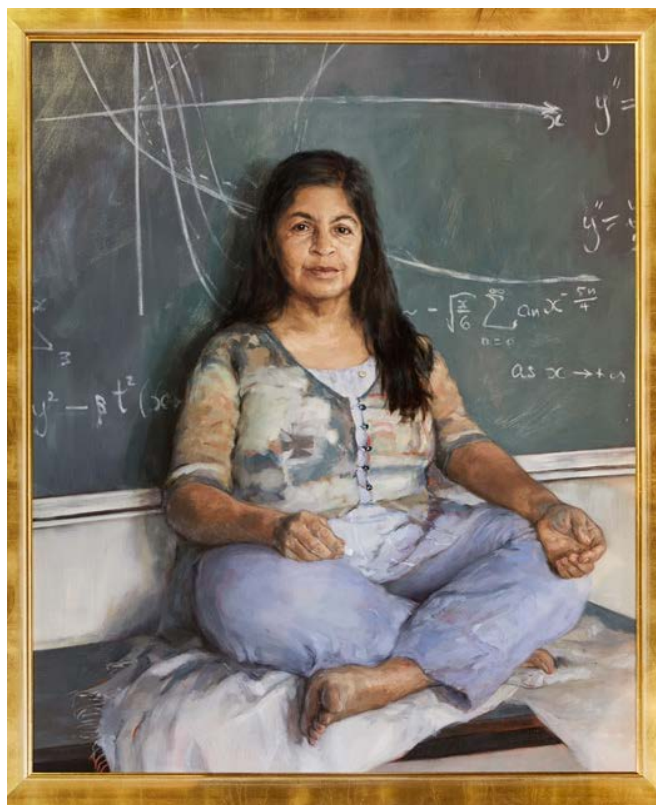
<http://www.theaustralian.com.au/higher-education/quantum-physicist-michelle-simmons-named-a-women-in-science-laureate/news-story/>

<http://www.stagewhispers.com.au/reviews/laden-table>

<http://www.abc.net.au/radionational/programs/ockhamsrazor/>

See page 1 for announcement of Annual Dinner or go to:

<https://nsw-royalsoc.currinda.com/register/event/34>



Nalini Joshi FRSN Honoured on International Woman's Day

Professor Nalini Joshi FRSN, whom our President mentioned in his column (see page 2), is one of the few woman professors of mathematics in Australia. She is first woman to have her portrait displayed in the University of Sydney's MacLaurin Hall. It was unveiled on International Woman's Day, 8th March.

Prof Joshi has been at the University of Sydney since 2002. There, she holds the Chair of Applied Mathematics and is the Georgina Sweet Australian Laureate Fellow in Mathematics. She previously did her BSc (Hons) at the University of Sydney (1978 - 1981). She then obtained her MA and PhD at Princeton University (1982-1986).

Since completing her PhD, she has held academic appointments at ANU (1987-1990), UNSW (1990-1997), and the University of Adelaide (1997-2002). She is a Fellow of the Australian Academy of Science.



Sat. 22 April 2017, 12:00 pm – 3:00 pm AEST
Assemble at Martin Place

“The March for Science celebrates the public discovery, distribution, and understanding of scientific knowledge as crucial to the freedom, success, health, and safety of life on this planet. We are a nonpartisan group, marching to demand action in the following areas: Funding, Communication, Policy, and Literacy. For more information see:

<https://www.eventbrite.com.au/e/march-for-science-sydney-tickets-31798910397>

Schedule of RSNSW Meetings 2017

Date	Event	Speaker(s)	Topics and Presentations	Location
5-Apr-17	Annual General Meeting	Dr Greg Organ Chief Scientist, Lion Company	Science of Beer	Union, University & Schools Club
3/05/2017	Annual Dinner	Prof. Peter Baume AC DistFRSN	Distinguished Fellows Lecture: “Don’t Blame the Unemployed” Annual Dinner and 2016 Award Presentation	Union, University & Schools Club
7-Jun-17	Ordinary General Meeting	Prof. Madeleine Beekman University of Sydney	Are You More Intelligent than Slime Mould?	Union, University & Schools Club
5-Jul-17	Ordinary General Meeting	Professor Andrea Morella	Understanding Quantum Theory	Union, University & Schools Club
2-Aug-17	Ordinary General Meeting	Prof. Ann Williamson FRSN University of New South Wales	Self Driving Cars: Will They Help?	Union, University & Schools Club
6-Sep-17	Ordinary General Meeting	Dr. Helen Mitchell Conservatorium of Music	Complexity of Music	Union, University & Schools Club
4-Oct-17	Ordinary General Meeting	Prof. Pip Patterson	Science of Social Networks	Union, University & Schools Club
1-Nov-17	Ordinary General Meeting	Pamela Griffith FRSN	Women in Art	Union, University & Schools Club
6-Dec-17	Ordinary General Meeting	Jak Kelly Award Winner	2017 Jak Kelly Award Presentation & Christmas Party	Union, University & Schools Club

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