



# The Royal Society OF VICTORIA

Promoting science since 1854

PATRON: The Hon Linda Dessau AM  
Governor of Victoria

PRESIDENT: Dr William Birch AM

## Headlines...

**8<sup>th</sup> September:** Alzheimer's Disease: is the Brain  
Destroyed by the Pulse?

**22<sup>nd</sup> September:** Keeping Melbourne Marvellous: People,  
Place & Environment (Panel)

## October Advance Notice:

**13<sup>th</sup> October:** The Hunt for Dark Matter: Stawell's  
Underground Physics Lab

**27<sup>th</sup> October:** Phillip Law Postdoctoral Award for the  
Physical Sciences: Lecture & Presentation

# September 2016 Newsletter

*Print Post Approved 100009741*

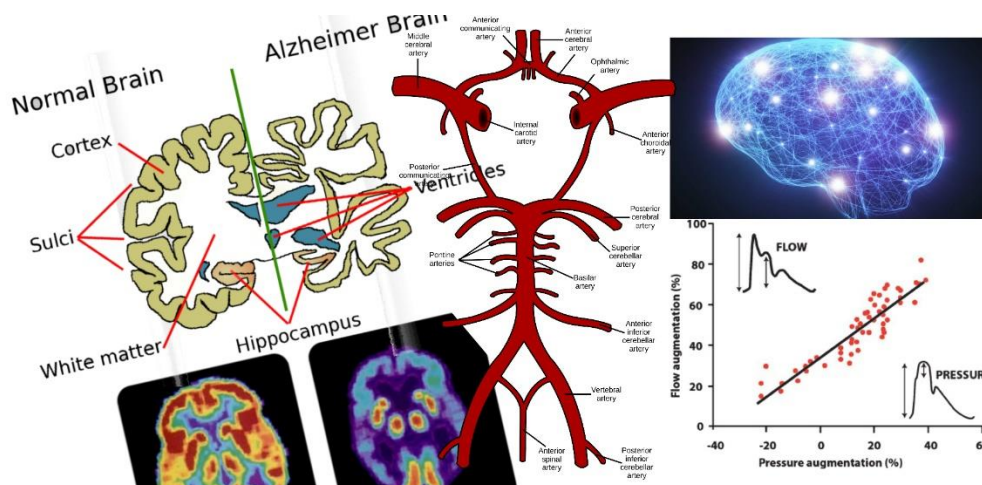


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## September Meetings & Events

### ALZHEIMER'S DISEASE: IS THE BRAIN DESTROYED BY THE PULSE?



The first September meeting of the Royal Society of Victoria will be held on  
**Thursday, 8<sup>th</sup> September 2016 at 7.00pm.**

**Speaker:** **Professor Jonathan Stone**  
**Executive Director, Bosch Institute**  
**Professor of Retinal and Cerebral Neurobiology**  
**School of Medical Sciences, The University of Sydney**

Alzheimer's disease afflicts people of many ages but is most commonly a disease of ageing. The Alzheimer's Association claims that, on average, a person with Alzheimer's lives four to eight years following diagnosis, but can live as long as 20 years depending on a range of factors. A devastating process of decline, the disease progresses from an early stage of lapses in memory and concentration, progressing to a middle stage where neurological decline robs the sufferer of memories, emotional regulation and autonomy, then finally a late stage where individuals lose the ability to respond to their environment, conduct conversation and, eventually, control movement.

Professor Jonathan Stone's current research concerns the biology of the ageing brain, with an emphasis on the mechanisms which maintain the brain's stability in the face of the stresses in ageing. He currently heads a Laboratory of Retinal and Cerebral Neurobiology, and in recent years has published extensively on the causes and mitigation of cerebral degenerations, identifying the role of vascular ageing in the development of age-related dementia (Alzheimer's disease) and developing the concept of acquired resilience in body tissues.

Professor Stone will trace evidence that age-related dementia (Alzheimer's disease) results from the destructive impact of the pulse on cerebral vasculature. Evidence will be reviewed that the neuropathology of the dementia is caused by the breakdown of small cerebral vessels (silent microbleeds), that the microbleeds result from pulse-induced damage to the cerebral vessels, and that pulse becomes increasingly destructive with age, because of the age-related stiffening of the aorta and great arteries, which causes an increase in the intensity of the pressure pulse. Implications for therapy will be discussed, and evidence reviewed that pulse-induced destruction of the brain, and of another highly vascular organ, the kidney, are becoming the default forms of death, the way we die if we survive the infections, cardiovascular disease, and malignancies, which still, for a decreasing minority, inflict the tragedy of early death.

#### About the Speaker

Professor Jonathan Stone graduated with a BMedSci degree from the University of Sydney in 1962, with a PhD in 1966 and a DSc in 1977. After a decade in the School of Anatomy at the University of New South Wales, he served as Challis Professor of Anatomy at the University of Sydney from 1987 – 2003. He is now Professor Retinal and Cerebral Neurobiology, in the Discipline of Physiology, Managing Trustee of the Sir Zelman Cowen Universities Fund and Executive Director of the Bosch Institute. He is a Fellow of the Australian Academy of Sciences, and served as its Secretary (Biological Sciences) from 1986-90.



Places are strictly limited, **bookings essential!** Book online now at <http://ow.ly/gvL7303JYRU> call or email the RSV office to secure your place: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au). If you plan to join us for food and drink ahead of the panel session from 6.15pm, please register your attendance so we can anticipate catering requirements. **All most welcome.**

## KEEPING MELBOURNE MARVELLOUS: PEOPLE, PLACE & ENVIRONMENT



The second September meeting of the Royal Society of Victoria will be held on  
**Thursday, 22<sup>nd</sup> September 2016 at 7.00pm**

In 2013, the Rockefeller Foundation launched the 100 Resilient Cities (100RC) initiative defines urban resilience as the capacity of individuals, institutions, businesses and systems within a city to adapt, survive and thrive no matter what kind of chronic stresses and acute shocks they experience. The City of Melbourne signed on, appointing its first ever Chief Resilience Officer, **Toby Kent**, to deliver the first Resilience Strategy developed for an Australian city.

Toby will chair **a future-focussed, interdisciplinary panel** at the Royal Society of Victoria to address the challenges for Melbourne as it addresses the chronic stresses and acute shocks in store for our City in the years to come.

**Chronic stresses** are challenges that weaken the fabric of a city on a day-to-day or cyclical basis, which for Melbourne includes rapid population growth, increasing social inequality, including housing stress, increasing pressures on our natural assets, unemployment (particularly among young people), climate change and increasing rates of alcoholism and family violence. **Acute shocks** are sudden events that threaten a city, which for Melbourne includes bushfires, floods, heatwaves, disease epidemics and infrastructure-related emergencies.

What steps can our educated, technologically enabled and science-literate society take to face the physical, social and economic challenges of the 21st century? How do we continue to adapt, survive and thrive as a city?



### **Chair: Toby Kent, Chief Resilience Officer, the City of Melbourne**

Toby has created and implemented resilience and sustainability strategies across a range of sectors. Since the late 1990s he has worked with governments, communities, industry sectors and many other stakeholders on five continents.

Various achievements include: helping to guide the growth of Corporate Citizenship, one of the UK's preeminent specialist Sustainability consultancies; leading PricewaterhouseCoopers' Sustainability work with retail and consumer goods companies in the UK, before running PwC's Sustainability & Climate Change team in Hong Kong.

Prior to joining the City Of Melbourne, he worked with leading Melbourne businesses, including MMG mining corporation and ANZ bank, where he was Head of Sustainable Development.

*"Unlike many other cities around the world, Melbourne City Council has limited mayoral powers. Transport, energy and water systems are all managed by various government and non-governmental bodies. The city is located in a region prone to extreme weather events, is likely to experience significant climate change impacts and has many upstream dependencies. The city has undertaken significant work to enhance its resilience, including developing adaptation strategies and plans, establishing networks, developing emergency management plans and undertaking risk assessments. Despite progress, significant opportunities remain to enhance Melbourne's resilience, particularly through more carefully coordinated efforts."*



### **Panellist: Dr Jerril Rechter, CEO, VicHealth**

Jerril is a World Health Organization Advisor and a board member of the International Network of Health Promotion Foundations. Her current Ministerial appointments include membership of the Liquor Control Advisory Council, and the Advisory Panel for the Inquiry into Women and Girls in Sport and Active Recreation and she is Chair of Victoria's Justice Health Ministerial Advisory Council. She regularly presents at state, national and international conferences and events to share her experiences in health promotion, leadership, the arts, and the potential of innovations to improve health and wellbeing for everyone.





### Panellist: Mr Dylan Brady, Conductor, Decibel Architects

In an award-winning career spanning 24 years, Dylan has contributed to many of the major public cultural buildings of Melbourne, from the Melbourne Museum to Federation Square. His projects span a range of sectors, from large scale public, government and community developments through to small scale residential projects. In 2010, with studio505, Dylan designed the Pixel building in Carlton, which remains one of the most energy efficient buildings in the world. He currently travels regularly throughout China and Malaysia managing projects under construction and spreading the aspirations and expertise of his studio in sustainable design and cultural architecture throughout South East Asia. He is extremely passionate about innovation, fresh thinking and engaging with new materials and new practices in the ongoing challenge to create and enable our shared, sustainable future.

*"Of key consideration in the resilience and strength of our city as it grows into the future is the equitable creation and distribution of increasing Value. Creation and distribution of the value in place, of the value in community, in food and transport and the physical structures of our living, learning and working lives.*

*The built environment is the fabric and tapestry that we weave our lives upon and within. It effects and affects us in ways well beyond 'shelter' and utilitarian function. It is an anchor to the physical world, and can be either a cruel shackle, or a deep cultural and character driven bond. To work towards achieving the latter, changing demographics, shifting energy needs and economic transition need to be addressed in our planning and thinking. We are challenged to avoid outdated inertia, establish rejuvenated momentum and vision, and bring everyone with us."*



### Panellist: Dr Rachel Carey, Research Fellow – Food Policy Research Group, Victorian Eco Innovation Lab (VEIL)

Dr Rachel Carey is a Research Fellow at the University of Melbourne's Victorian Eco Innovation Lab, where she leads the Foodprint Melbourne project, which is investigating the role of Melbourne's foodbowl in the city's future food security. Rachel has worked on food policies for the City of Melbourne and City of Greater Geelong, and is an Honorary Research Fellow at the Centre for Food Policy at City University, London.

*"Melbourne's demand for food is increasing as the city's population grows, but urban sprawl is reducing the capacity of Melbourne's foodbowl to supply fresh foods to this growing population. If farmland on the city fringe is protected as Melbourne grows, the city's foodbowl could play an important role in strengthening the resilience of Melbourne's future food supply in the face of increasing pressures on global food supplies due to climate change and declining availability of land and water. The city's foodbowl could act as a buffer against potential disruptions to food supplies due to extreme weather events, and recycled water from the city's water treatment plants could be used to create 'drought proof' foodbowl areas. Maintaining a resilient food supply for Melbourne in future requires clever city planning, now. "*



### Panellist: Mr Michel Masson, CEO, Infrastructure Victoria

Michel brings more than 20 years' experience in senior transport and infrastructure roles in Europe and Australia including as CEO of Keolis Downer and Yarra Trams. He formerly led Calibre Group's transport infrastructure and services division. Infrastructure Victoria was established under legislation in September 2015, a board was appointed in October and Michel was appointed as the new body's first CEO in December, commencing in February this year. In addition to delivering a 30-year infrastructure strategy, Infrastructure Victoria will also provide independent advice to the Government when requested and publish research on infrastructure matters.

*"There is a need for Victoria's infrastructure, and particularly critical assets, to be more resilient and adaptable in the face of creeping challenges, such as climate change, and unexpected disruptions both large and small.*

*Infrastructure Victoria thinks the resilience of critical infrastructure is largely related to improved planning, coordination and governance. Infrastructure Victoria has been given the important task of developing the first ever statewide infrastructure strategy, which will cover nine sectors and provide recommendations which seek to improve the resilience of critical infrastructure."*

**Eventbrite**

Places are strictly limited, **bookings essential!** Book online now at <http://ow.ly/KrtJ303JYUU>, call or email the RSV office to secure your place: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au). If you plan to join us for food and drink ahead of the panel session from 6.15pm, please register your attendance so we can anticipate catering requirements. **All most welcome.**

## Professional Development



**Friday, 23<sup>rd</sup> and 30<sup>th</sup> September from 9:00am to 5.00pm**

### **SCIENCE WRITING & OUTREACH TRAINING WORKSHOP**

We are delighted to advise acclaimed science-writer, journalist and broadcaster [Peter Spinks](#), MA, will run a two-day science writing and outreach training workshop at the Royal Society of Victoria.



This intensive course will benefit media and communications professionals at universities and research institutes, scientists, technologists and graduate students, who will learn the essential skills and strategies needed to convey your work to the media, government, research grant bodies and the general public.

The workshop will cover fundamental principles and “rules of the journalism game”, with hands-on training in preparing articles, features, media releases and illustrative material for many outlets. Channels include in-house, local and international publications, and the digital media. In addition, the sessions will groom participants for science interviews by the print and broadcast media. Legal issues affecting researchers and the media will also be discussed.

Participants completing the course will have acquired a valuable skill set, including the confidence and media-savvy needed to liaise with journalists, project messages clearly and simply, and prepare successful media releases. Worked examples, reference materials and background notes will be provided. You will also receive a certificate of completion, endorsed by the Royal Society of Victoria.

#### **Syllabus snapshot:**

- |   |                                      |
|---|--------------------------------------|
| + <i>Science and the media: why bother?</i> | + <i>Going live</i>                  |
| + <i>Introduction to science journalism</i> | + <i>Every picture tells a story</i> |
| + <i>Nosing out news</i>                    | + <i>Science writing and the law</i> |
| + <i>The media release</i>                  | + <i>Editing with ease</i>           |
| + <i>A-Z of science writing</i>             | + <i>Science in action</i>           |
| + <i>Our digital world</i>                  | + <i>Planning ahead</i>              |
| + <i>The science interview</i>              | + <i>Bibliofile</i>                  |



Enrol online now at <http://ow.ly/ySjl303JYYj>, call or email the RSV office to secure your place: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au). Fees include all training materials plus catering for breaks and lunch. **Discounts apply to RSV members.**

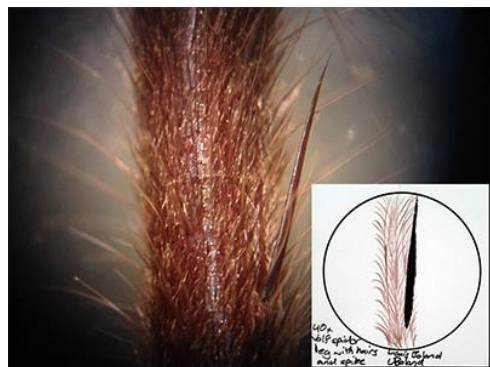


# School Holiday Program

## MICROSCOPE DRAWING LABORATORY & “SMALL FRIENDS” STORYTELLING

27<sup>th</sup> and 28<sup>th</sup> September from 9:15am to 4.30pm

The Royal Society of Victoria presents a science and art-based school holiday activity for kids from the [Scale Free Network](#).



### MICROSCOPE DRAWING LABORATORY (MORNING)

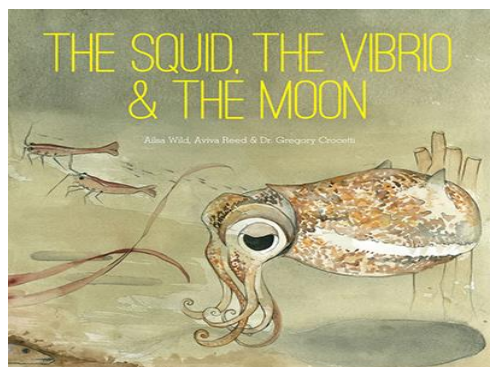
The *Microscope Drawing Laboratory* brings together science and art techniques to observe and explore the hidden microscopic world.

Combining direct observation of structures and organisms through microscopes with the art of observation through drawing, this workshop aims to create a greater connection between participants and the microscopic world under their fingertips.

Led by a microbial ecologist (Dr. Gregory Crocetti) and a visual artist (Aviva Reed/Briony Barr), this workshop will inspire the creation of artworks that are both beautiful and scientifically accurate.

There will be two stations running concurrently, with the group split in half, combining again after 45 minutes. The two main components are:

- The first involves looking at a range of everyday objects through stereo microscopes and responding to these through drawing.
- The second involves observing relevant microscopic images (micrographs) to inspire illustration. Participants will be provided with a lesson in watercolour painting. Using this technique, they will create an artwork inspired by the microscopic world. Please remember to leave a space on the fridge or the wall at home for all masterpieces created during this workshop!



### SMALL FRIENDS STORYTELLING (AFTERNOON)

The *Small Friends* stories feature new illustrated science-adventure stories starring microbes, molecules and mucus – members of the tiny symbiotic societies living inside different marine animals. These two books highlight the role of partnerships and co-operation in nature (not just competition).

The books were created in collaboration with a small army of writers, artists, scientists, educators and designers – including writer Ailsa Wild, artists Aviva Reed and Briony Barr (SFN), microbial ecologists Dr Gregory Crocetti (SFN) and Professor Linda Blackall.

Activities include:

- a storytelling (with digitally projected story visuals) and facilitated scientific discussion on symbiosis and other relationships within the stories,
- an artist-led marine creature drawing/painting activity, and
- an author-led writing activity based on an imaginary aquatic landscape.

All program staff are engaging and experienced convenors of children's workshops, have up-to-date Working with Children Checks and First Aid training.



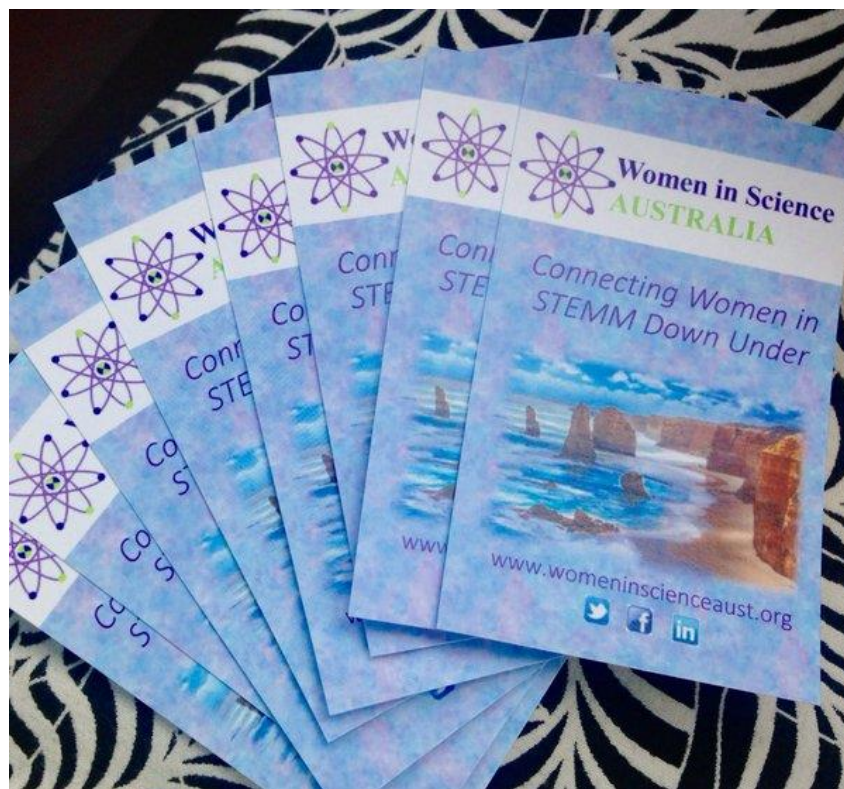
**Eventbrite**

Places are strictly limited, **bookings essential!** Book online now at <http://rsv.org.au/events/school-holiday-science-at-the-royal-society-of-victoria/>, call or email the RSV office to secure your place: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au). **All most welcome.**

## Partner Event

### NATIONAL SYMPOSIUM: CONNECTING WOMEN IN STEMM

Women in Science AUSTRALIA (WISA) invites you to join their first National Symposium: **Connecting Women in STEMM** to be held **SEPTEMBER 13-14, 2016** in Storey Hall at RMIT University, Melbourne!



In less than two years Women in Science AUSTRALIA has grown into a nationally recognised association for women in STEMM. The Royal Society of Victoria is a proud network partner and will host the symposium dinner at St Kilda Town Hall on the evening of **13<sup>th</sup> September**.

With almost 10,000 members and followers, WISA aims to connect women in Science, Technology, Engineering, Mathematics and Medicine (STEMM) regardless of their discipline or profession. This two-day meeting will share best practices and policies in academia and industry, as well as ground-breaking initiatives to foster an environment where more women in STEMM can lead and excel. They will introduce a wide range of programs for girls interested in STEMM and science teachers are encouraged to attend this session (discount applies). Delegates will have the opportunity to enhance their skills, learn about different career pathways and importantly, extend their professional network.

Women in STEMM in industry, education, research, management, academia, government, administration, publishing and communication are invited to participate. Men who champion change and those who want to see equity and equality in the workplace are also invited and encouraged to attend. This is an inclusive event and all are welcome – registration is essential.

Connect with STEMM leaders and professionals from across the sector – WISA looks forward to welcoming you.

**Featuring:** Professor Sharon Bell, Professor Caroline McMillen, Dr Wafa El-Adhami, Professor Marilys Guillemain, Associate Professor Kay Latham, Professor Glenn Wightwick, Professor Lee Astheimer, Associate Professor Heidi Drummer, Associate Professor Madhu Bhaskaran, Professor Julie Bernhardt, Associate Professor Birgit Loch, Associate Professor Marnie Blewitt, Professor John Carroll, Yasmin Shafi, Natasha Mitchell, Bronwyn Lee, Dr Eroia Barone-Nugent, Dr Jenine Beekhuizen, Nicole Brown, Louise Johansson, Dr Marguerite Evans-Galea, Michelle Gallaher, Norah Breekveldt, Professor Madelein McManus, Dr Saraid Billiards, Jacinta Duncan, Dr Julie Wheway, Dr Nikola Bowden, Heather Catchpole, Gavin Fox-Smith, Dr Krystal Evans, Professor Veena Sahajwalla, Dr Melina Georgousakis, Topaz Peacock, Fiona Hayes, Julia Page, Marnie Carroll.

Full program: <https://womeninscienceaust.org/national-symposium-save-the-dates/program/>

**Eventbrite**

**Hurry – registrations close 2 September!** Register online now at <http://ow.ly/Uvfv302ncfv>, prices are scaled according to professional seniority. **All most welcome.**



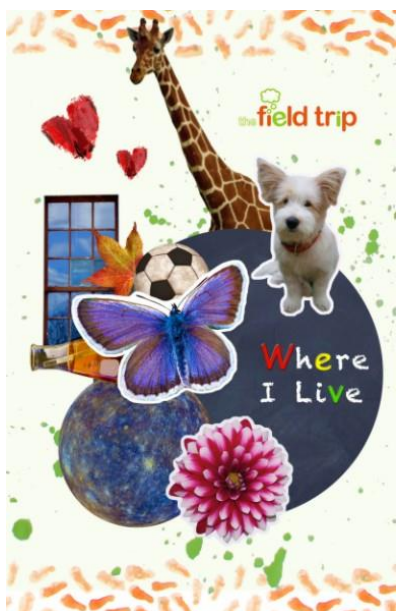
## RSV Outreach Program

### The Field Trip: Journeys in Science



**The Field Trip: Journeys in Science** has just completed its first four weeks of collaborative workshops with a group of kids keen on developing their skills, interests and connections with each other and the science community.

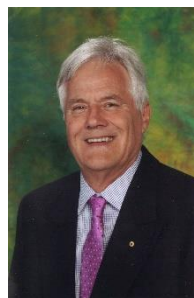
We're always looking for more participants to work with our enthusiastic 'drivers' from the Young Scientists of Australia – register online at <http://royalsocietyvictoria.org.au/science-outreach/the-field-trip-journeys-in-science/>



Meanwhile, the kids have contributed to a book titled **"Where I Live,"** a compilation of efforts from several "Field Trip" groups from regional and metropolitan Victoria. The book is available for purchase [online](#) and will be launched at a special event at Readings (Carlton) at **5:00pm on Monday, 12 September** – come along and help us celebrate an early milestone.

## From the President

### The next Council elections



All elections for the Society's Council are important, but the next one, scheduled for December, has particular significance.

Firstly, under the new rules, where no council member may serve for longer than eight years continuously, we are set to lose two office-bearers (Treasurer Mr Norman Kennedy and me) and three Chairs of council committees, namely Professor Sandra Rees (Science Programme), Mrs Helen Gardiner (Outreach and Partnerships) and Mark Williams (Publications and Records). As a consequence of my stepping down as President, we will also say goodbye to Professor Lynne Selwood from her position as Immediate Past President. Clearly, these departures amount to an immeasurable loss of experience and collective wisdom from council.

Secondly, you will note that three of the six leaving Council are women, which represents a substantial reduction in gender balance that currently stands at around 36% women. In addition, one ordinary council member and one office bearer will reach the end of their initial two year term – Dr Peter Baines and Mr David Zerman – but are eligible to renominate.

All this means that we have a potential change to just over half of the currently constituted Council. While introducing a regular turnover in Council membership was the intention of the rule changes, nevertheless, this next election represents a greater challenge than we might have anticipated. Of course it is a great opportunity for members to put their hands up and offer themselves as candidates for Council. I encourage you not to wait until you are 'tapped on the shoulder' but to ask any current Councillor or our CEO about what is involved. I can assure you that the duties are not onerous, instead, in the current climate of opportunities for the promotion of science and the role of the Society, your experience will be stimulating, rewarding and enjoyable.





## Nominations for RSV Membership

Nominations for membership of the Society have been received on behalf of:

Mr **Milosh LEE**, Self Employed  
Miss **Rosaria STRAMANDINOLI**, Principal Patent Attorney  
Dr **Kathryn Barbara MORRIS**, Patent Attorney  
Mr **Peter Milner SPINKS**, Science Writer  
Ms **Elise Claire IRELAND**, University Student  
Dr **William YAN**, PhD Student

Unless Members request a ballot, they will be considered for election by Council and if elected, will be announced at the Ordinary Meeting of the Royal Society of Victoria held on 13<sup>th</sup> October.

Recently elected members who have not yet signed the Society's membership book are invited to attend the 8<sup>th</sup> September meeting to be formally welcomed as members. Please inform the office if you plan to attend.

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## August Excursion: The John Monash Science School and the Monash Earth Sciences Garden



*Prue from the Monash School of Earth, Atmosphere and Environment demonstrates tropical corals found in Gondwanan fossil rock from Victoria's granitic highlands to RSV members.*

Our fourth excursion for the year took us to the Clayton campus of Monash University on 9 August for an outstanding day of exploration and discovery! In the morning RSV members were treated to a fantastic tour of the wonderful Earth Sciences Garden, the first installation of its kind in Australia. The Garden's design comprises a stunning arrangement of more than 500 rock specimens, which represent the wide variety of igneous, sedimentary and metamorphic rocks found in Victoria. The rocks are laid out to form

outcrops in a geological map of our State, offering hands-on learning in field measurement and mapping techniques, and rock and mineral recognition skills.



*Nick demonstrates the use of a compass to measure the inclination of rocks in geological surveys.*

Huge thanks are due to our RSV colleague **Dr Julie Boyce** for organising the morning, but particularly to Dr Jim Driscoll, Prue, Andrew, Nick and team for teaching us so much and making us very welcome to Monash University's School of Earth, Atmosphere and Environment! The School's Outreach program is keen to welcome groups from schools and other learning organisations to the Garden, a highly recommended experience for students of any age.



*The purpose-built facilities of the John Monash Science School; open spaces merge with dedicated classrooms to accommodate mixed activities from individual study to collaborative group work to class work. The space is attuned to keeping lines of sight open, with plenty of light and air, vibrant and stimulating without being overwhelming and alienating.*

In the afternoon we found ourselves in the vibrant John Monash Science School (JMSS), Victoria's first specialist science secondary school. The JMSS provides a rich science-based curriculum, educating the 'whole person', developing leadership, initiative and perspective in graduates.

Their work is underpinned by UNESCO's four pillars of education - *Learning to Know, Learning to Be, Learning to Do* and *Learning to Live Together*. The close-knit, supportive and welcoming environment evident at JMSS is the



result. They have strong working relationships with Monash University's Science and Education Faculties, and being co-located on the Clayton campus allows JMSS students to enjoy a variety of subjects based on contemporary research.



**Partnerships manager Ashley Van Krieken demonstrates the Emerging Sciences Victoria program, interactive lessons broadcast live to students in regional Victoria as subjects within the local curriculum, here featuring Head of Science Mark McTier teaching from the neighbouring studio.**

Importantly, the JMSS is also an executive member of the International Science Schools Network, creating opportunities for collaboration and exchange around the world, cross-pollinating pedagogical and curriculum innovations and building global relationships for teachers and students alike.



**The opportunity to talk with these smart, motivated, informed, curious and confident young women and men - here conducting some data gathering in support of an EPA pollution-monitoring exercise – was a rare privilege, which we can only hope will become less rare as the success of the JMSS program translates to science education throughout the State. What an amazing school!**

If you have a young person in your life passionate about the sciences, they will blossom at this school. We met fantastic school leaders, teachers and most of all a confident and intelligent student body passionate about developing their interests and expertise in the sciences.

Particular thanks are due to our RSV colleague Dr Ray Shaw for putting so much into organising

a very rewarding tour for us all – **thanks Ray**. Gratitude also to principal Peter Corkill, deputies Sally Cheah-Johnson and Andrew Chisholm, partnerships manager Ashley Van Krieken and Head of Science Mark McTier for a wonderful briefing, tour and lunch for our delighted members. We left with great hope for the future of Victorian science, and brim full of admiration for the visionary work of Peter and his team. Well done!

## The Invisible War



**Ted Baillieu looks on as Robyn Williams convenes the panel and audience discussion.**

National Science Week has come and gone, and we were delighted to host the launch of the Scale Free Network's graphic novel "The Invisible War," a remarkable exploration of the battle fought between invading bacteria and the immune response of a nurse running a field hospital during the Battle of the Somme.

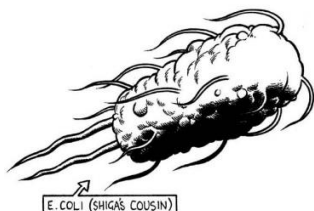


Following a moving presentation from the Chair of the Victorian ANZAC Centenary Committee, Ted Baillieu, we moved to a lively and engaging panel discussion with the scientists and artists



involved in the book's production, led by Radio National's Robyn Williams.

There was an exhibition in the Cudmore Library, a period dress-up photo booth and a gorgeous harp playing in the Burke and Wills Room, and a lovely Saturday afternoon atmosphere! Congratulations to the science, writing and artistic team, and best wishes for getting this unique work out to Victoria's secondary schools.



The Invisible War is available to view, or purchase, online from <http://theinvisiblewar.com.au/>.

## The Biggest Night of the Year: the 2016 RSV Young Scientists Research Prizes



*Eight highly engaging presentations on diverse subjects kept our audience and judging panellists on the ball*

It's always worth it! What a great night – after months of applications, assessments and preparation, the Royal Society of Victoria was delighted to once again welcome eight remarkable young women and men to present the fruits of their postgraduate research on the night of Thursday, 11 August.

Over two hours, a panel of judges and a theatre packed with PhD supervisors, colleagues, friends and family heard from a diverse field of subjects across four prize categories; the physical sciences, earth sciences, biomedical sciences and biological (non-human) sciences.

“With 100 highly competitive entries this year, just being here tonight as a finalist is a remarkable achievement,” said RSV President Bill Birch during the prize announcements, welcoming the entrants as new members of the Society and its long tradition of promoting the sciences in Victoria. After a challenging judging session, the results for each category were announced at a celebratory function in the Burke & Wills Room, as follow:

### **RSV Young Scientist Research Prize for the Biological (Non-Human) Sciences:**

**Category Winner: Ms Yang Chen**, Monash University, School of Earth, Atmosphere & Environment



*Modelling forest litter-bed fuel load using LiDAR*

**Category Runner Up: Ms Rebecca Hull**, University of Melbourne, School of Biosciences



*Environmental stress that varies temporally has important consequences for individuals*

### **RSV Young Scientist Research Prize for the Physical Sciences:**

**Category Winner: Ms Rebecca Leane**, University of Melbourne, School of Physics



*Searching for dark matter in the sky and at the Large Hadron Collider*

**Category Runner-up: Mr Dene Murphy**, University of Melbourne, School of Physics



*Colder than the depths of space: Charged particle beams near absolute zero*

### **RSV Young Scientist Research Prize for the Earth Sciences:**

**Category Winner: Mr Mathias Egglseder,** Monash University, School of Earth, Atmosphere & Environment



*Iron oxide nanocrystals:  
Tiny minerals building  
huge iron ore deposits*

**Category Runner Up: Ms Georgia Roberts,** La Trobe University, Department of Archaeology & History



*The individual in the  
trees: Assessing human  
movement, resource  
use and adaptive  
strategies in  
Pleistocene Tasmania*

### **RSV Young Scientist Research Prize for the Biomedical & Health Sciences:**

**Category Winner: Mr Chi Hai Ly,** University of Melbourne, Department of Physiology



*Metabolism regulates  
asymmetric division and  
commitment to the  
myogenic lineage in  
skeletal muscle stem  
cells*

**Category Runner Up: Mr Thanh Kha Phan,** La Trobe University, Department of Biochemistry & Genetics



*PIP PIP Hooray: PIP2-  
targeted antimicrobial  
peptides as novel  
anticancer therapeutic  
agents*

Congratulations to all of our finalists, both prize winners and runners up, on your outstanding work. Presenting three or more years of complex research in ten short minutes is quite the challenge!

Thanks to all our assessors, and our hard-working judging panel: Prof Sandra Rees, A/Prof Gavin Smith, Prof Lynne Selwood, Mr Norman Kennedy, Dr Bill Birch, Dr Kevin Orrman-Rossiter and Prof David Walker. Thanks in particular to the

families of Neil Archbold and Edmund Gill for supporting the prizes, and the amazing fundraising work of Melbourne-based science fiction author Lee S Hawke through her Pozible campaign earlier this year – we are so grateful! This year we awarded \$5000 in prize money to recognise and reward excellence in Victoria's early career scientists, and we couldn't have done it without you.

### **Proceedings of the Royal Society of Victoria**



The latest issue of the RSV's *Proceedings* is now available online through CSIRO Publishing, featuring outstanding papers from the leading Australian ecologists, botanists, environmental scientists and forest managers involved with the Society's March 2016 joint symposium with the Bjarne K Dahl Trust on "Conserving Eucalypts."

This issue includes papers from symposium speakers Andrew Bennett, David Lindenmayer, Peter Vesk, Suzanne Prober, Brad Potts, Michael Bayly and Michael McCarthy (et al), with a supplementary paper from John Ford and Paul Hamer on "The forgotten shellfish reefs of coastal Victoria."

Members who have pre-ordered a hard copy should watch for the mail in late September. Please enquire at the RSV office if you would like to purchase a hard copy; otherwise, the digital version is available online at <http://www.publish.csiro.au/?nid=308>

### **Call for Papers**

We are always interested in hearing from authors. Papers, Reviews and Reports of experimental or descriptive research, submitted for publication by the Royal Society of Victoria, should not have been published hitherto, nor should they be under consideration for publication elsewhere. Those interested in



submitting papers should review the [Instructions for Authors](#).

## Forensic DNA Profiling: What does the Future Hold?



*Dr Linzi Wilson-Wilde illustrates that whole genome mapping can now be carried out within a week, at low cost, at a level of detail that can tell identical twins apart.*

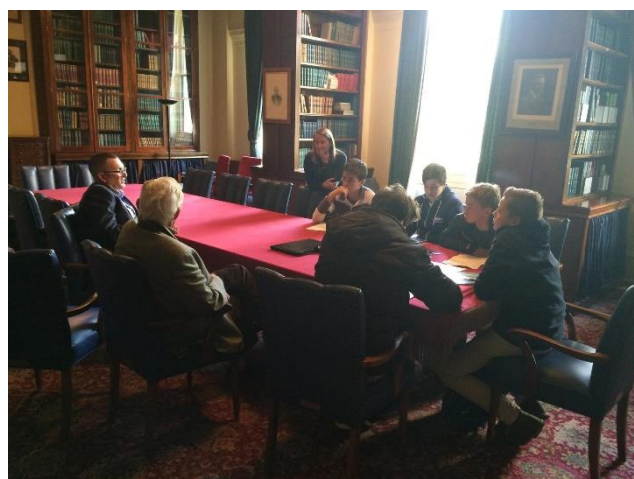
What a brilliant presentation we had last Thursday, 25 August from Dr Linzi Wilson-Wilde! Funny, revealing, educational and hugely engaging, using examples to inform the science of forensic DNA profiling from her own family through to leaders of nations right back to Richard III (pictured below in the "less evil" colours and hues his genome informs us were most likely!). A wonderful opportunity to hear from an accomplished forensic scientist, Australia's most senior woman in the field.



We were also delighted to welcome a group of teachers and Year 9 students from Geelong College along for the afternoon, who met in groups with Linzi and RSV members Bob Iverson, David Petch and William McMaster to canvass issues in their respective fields of forensic DNA analysis, marine sciences and materials science. Grateful thanks to our colleagues for being so generous with their time, and presenting the RSV at its best!



*Linzi Wilson-Wilde discusses forensic agreement with Geelong College students in the Ellery Theatre*



*David Petch and Bob Iverson discuss marine and biological sciences with Geelong College students in the Cudmore Library.*



*Dr William McMaster and a group interested in physical chemistry and materials science in the Phillip Law Room.*

## The Making of the Melbourne Mechanics Institution: the movers and shakers of pre-gold rush Melbourne

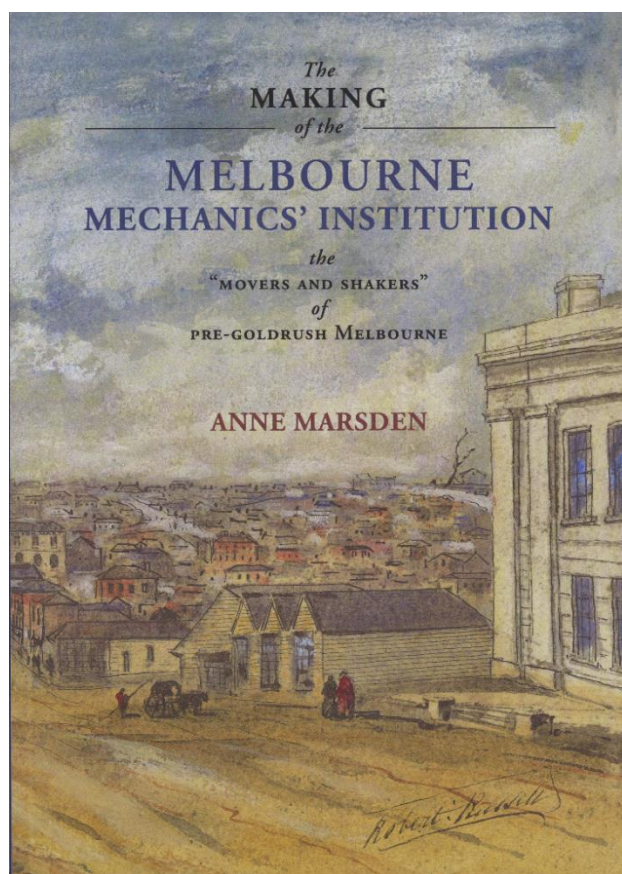
A lot can happen in a short time! Thanks to the energies of RSV member Dr Doug McCann, we pulled together a wonderful evening last Friday night at short notice to launch Anne Marsden's terrific new history, tracing the origin of the

mechanics' institute movement in Britain and the links between the three first institutes in Australia, in Sydney, Van Diemen's Land and Melbourne.

A close look at the fifty men elected to the Melbourne Institution's first committee, and their pioneering role in the settlement of Port Phillip, reveals the broad social platform leading to the cultural identity of contemporary Melbourne, and perhaps the origins of the Melbourne-Sydney rivalry.

It was a pleasure to collaborate with our "sibling organisation" the Melbourne Athenaeum Library which, like the Royal Society of Victoria, counts the Melbourne Mechanics Institution as a precursor. Thanks to the Royal Historical Society of Victoria's A/Prof Don Garden and the Athenaeum Library's Sue Westwood for joining Doug and Anne on the evening for a great night of presentations, discussions and celebration.

Anne's new history is available from the RHSV's website at <http://ow.ly/5mC4303KiRX>.



## RSV Journal Collection Disposal

A large collection of journals have been kept in storage for several years thanks to the generosity of RSV member Clive Wilmot, but sadly this arrangement has reached a natural conclusion and the collection has now been transferred to a commercial facility, attracting an unsustainable weekly cost to the Society.

Consequently, the Society has decided to dispose of the collection. A number of major libraries have been approached to seek their interest, and happily the State Library of Victoria has identified a large number of volumes that address gaps in their holdings, and will accept these for inclusion in their collection.

The remainder of our holdings are listed online for review by RSV members. If you see something that would be of interest for inclusion in your personal or professional library, please let us know by no later than **5pm, Friday, 23 September**. Any items not claimed by this date will be disposed of.

Please note we will disburse our holdings by box, rather than by run or title. While non-members are welcome to express interest, holdings will be distributed on a first come, first served basis, favouring the requests of RSV members.

For ease of communication and management, please tick off any items you would like to receive from us at the end of September, indicating your name, membership status and delivery address in the fields provided, and return these pages to the Society for the attention of The Secretary.

The full list, with the Expression of Interest form, is available online from <http://rsv.org.au/wp-content/uploads/RSV-Expression-of-Interest-Form-Journal-Disposal-List.pdf>. Hard copies are available from the RSV office.

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## An Evening with Ben Goldacre



We are partnering with [Think Inc.](http://www.thinkinc.org.au) to promote this exciting Australian event, coming to Melbourne on **23 September**. A dynamic, uncompromising and controversial critic of "Bad Science," come delight in Ben Goldacre's infamous evisceration of the "factoid" in real time!

More information and tickets are available [online](http://www.thinkinc.org.au) (link text below). The Royal Society of Victoria's **Members are eligible for a 10% discount** – please check your email for instructions, or contact us in the office for the discount code.

<https://www.thinkinc.org.au/events/ben-goldacre/>



## 2016 RSV Lecture Program

Save the dates! All lecture details and bookings are available online from:

<http://www.rsv.org.au/lecture-program/>

### Lectures from September to December:

- 8<sup>th</sup> September – Professor Jonathan Stone, **“Alzheimer’s Disease: Is the Brain Destroyed by the Pulse?”**
- 22<sup>nd</sup> September – Panel & Discussion, **“Keeping Melbourne Marvellous: People, Place & Environment.”** Chaired by Toby Kent (Chief Resilience Officer, City of Melbourne), and featuring Michel Mason (CEO, Infrastructure Victoria), Dr Rachel Carey (Research Fellow, Victorian Eco Innovation Lab), Dylan Brady (Conductor, Decibel Architects) and Dr Jerril Rechter (CEO, VicHealth).
- 13<sup>th</sup> October – Professor Elisabetta Barberio, **“The Hunt for Dark Matter: Stawell’s Underground Physics Lab”**
- 27<sup>th</sup> October – **Phillip Law Postdoctoral Award for the Physical Sciences & Lecture**
- 10<sup>th</sup> November – **Science Communication Lecture with Dr Andi Horvath**
- 24<sup>th</sup> November – **Very Young Scientists (Science Talent Search Bursary Recipients)**
- 8<sup>th</sup> December – **RSV Research Medal Lecture & President’s Soiree**

**The 2017 Program is now under construction!**

Do you have an idea for a great science talk, or know of a terrific presenter? Please forward your thoughts to [ceo@rsv.org.au](mailto:ceo@rsv.org.au) for consideration by the Science Program Committee.

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## Support the Royal Society of Victoria

The Royal Society of Victoria is an independent, not-for-profit organisation and a registered charity. Our ability to maintain our programs and promote science in the Victorian community depends on resources raised from membership fees, revenue from venue hire, sponsorship of events, and donations and bequests.

### Membership

Membership of the Royal Society of Victoria (RSV) connects you to Victoria’s science community, a broad collective from academia, industry, government, schooling and further afield with a strong interest in the sciences and a commitment to its standing and status in the community. The Society is comprised of, and governed by, its members. RSV Council members and officers are elected from the general membership, and participation in the committees of Council focussed on science policy and communications, the science program, our outreach and partnership activities, our publications and records and the membership activities program is open to all RSV members.

Fees from annual membership subscriptions are an important avenue of support for the RSV’s programs and rates vary according to your career/life stage and location. If you have enjoyed participating in our activities as a friend, or would like to explore opportunities for a deeper involvement with our community through the promotion of science, we would be delighted to welcome you as a member. Forms and further information are online at <http://rsv.org.au/membership/how-to-join/>.

### Donations and Bequests

If you are considering your legacy, or are interested in contributing to the growth and success of the Society’s projects and programs, we would gratefully welcome your generous support. Donations and bequests can be made at any time, and are tax deductible. These can be of a general nature, or you can specify the purpose to which your support should be directed as follows:

### Science Program

The ‘ordinary meetings’ of the Royal Society currently comprise an outstanding public lecture program on subjects ranging across the disciplines in Science,

Technology, Engineering, Mathematics and Medicine (STEMM), along with a suite of distinguished awards and prizes to foster, recognise, reward and celebrate excellence at all stages of a scientist's career. It is our opportunity to learn more about progress in science, discuss issues together, and offer a broader promotional platform to scientists and their research with the general community.



Our aspirations for the Program include the upgrade of facilities in our heritage Hall to enable video recording and

transmission of key events to reach a wider audience, plus additional events that enable our members to share professional experiences and expertise, contribute to public debate and deliberation, raise major issues in science and society, and bring the collective scientific wisdom of this accomplished group to bear on challenges facing our home here in Victoria, Australia.

### **Outreach and Partnerships - Supporting Youth and Diversity in Science**

The future of science, and of our society, rests with the generations currently engaged in schooling and tertiary studies. The RSV's membership is deeply committed to the development of youth skills that will enable these generations to be productive, innovative and professionally agile in a challenging era of rapid technological, environmental and economic change. The RSV aspires to activate a community-based approach to recognising and fostering engagement in the sciences across regional and metropolitan Victoria, whether through leadership development initiatives, social inclusion and workforce participation projects, or collaborative learning programs.

Partnership with other organisations whose goals align with the Society's is a key strategy for achieving outcomes through pooling resources; however, all shared projects require co-contributions



of funds, particularly where a volunteer base needs to be managed and augmented with professional project staff and resources.

### **Science History, Culture and Heritage**



The Royal Society of Victoria has a long and distinguished history of contribution to the civic and cultural life of Victoria. Founded in 1854, much of our story, and the story of science in Victoria, has been told, but much

remains to be discovered, understood and shared.

Science is an important part of our state's cultural life, a point of inspiration not just for discovery and invention, but also creativity and expression. Increasingly, the arts community is finding ways to help scientists bring their work to a larger audience through the tools of literature, visual arts and music.

We have maintained our colonial buildings and grounds on our small CBD triangle for almost 160 years, and hope to continue for many years to come!

### **Science Policy, Advocacy and Communication**

One of the best ways to make a real impact is to get the right people talking to one another. In the sciences, this means recognising

and including expertise, but this expertise means little if nobody is listening. Convening scientific expertise with communities and key influencers in government and industry is vitally important, as is the publication of robust science conducted in and about Victoria to inform debate and discussion.

Bringing the big picture together for a community of interest takes time, diplomacy, patience and resources.

**Please help us to do more!** Contact us today about corporate sponsorship, making a personal donation, or leaving a bequest: [rsv@rsv.org.au](mailto:rsv@rsv.org.au) , 9663 5259.

