



# The Royal Society OF VICTORIA

Promoting science since 1854

PATRON: The Hon Linda Dessau AM  
Governor of Victoria

PRESIDENT: Dr William Birch AM

## Upcoming Events...



**8<sup>th</sup> December @ 6:30pm:** Quantum Information Technology: From the Spooky World of Quantum Physics.

*Professor Lloyd Hollenberg, The University of Melbourne*  
*The RSV Medal for Excellence in Scientific Research Lecture*  
Followed by the **President's Soiree** @ 7:45pm

## February Advance Notice:

**9<sup>th</sup> February:** Scanning the Ruins: Imaging the Shipwrecks of Port Phillip Bay  
*Tim Smith, Executive Director, Heritage Victoria*

**23<sup>rd</sup> February:** Accounting for Carbon Storage in Trees  
*Professor Ian Woodrow & A/Professor Brad Potter, University of Melbourne*

# December 2016 Newsletter

*Print Post Approved 100009741*

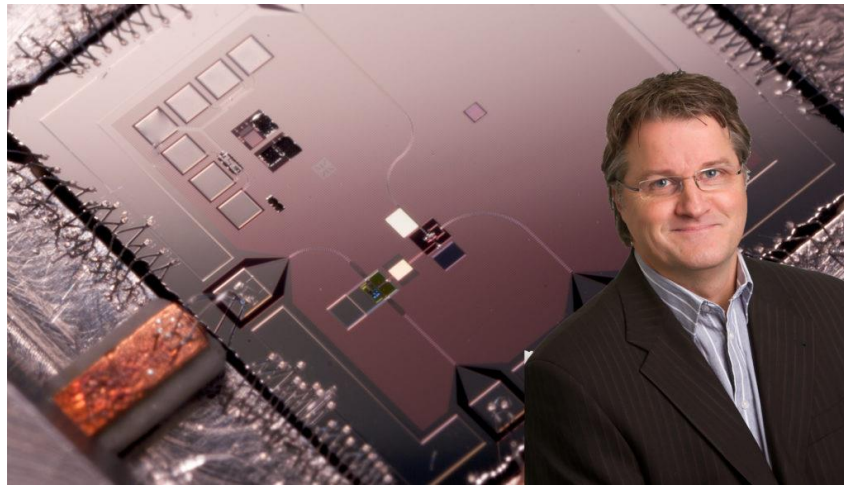
The Royal Society of Victoria Inc.  
8 La Trobe Street, Melbourne  
Victoria 3000  
Tel. (03) 9663 5259  
[rsv.org.au](http://rsv.org.au)



## December Meeting

# QUANTUM INFORMATION TECHNOLOGY: FROM THE SPOOKY WORLD OF QUANTUM PHYSICS

### 2016 RSV Medal for Excellence in Scientific Research Lecture



Thursday, 8<sup>th</sup> December 2016 at 6.30pm.

**Speaker:** **Professor Lloyd Hollenberg**  
**Winner, 2016 RSV Medal for Excellence in Scientific Research**  
**Thomas Baker Chair in Physical Biosciences, The University of Melbourne**  
**Deputy Director, Centre for Quantum Computation and Communication Technology**

In recent years new and surprising aspects about quantum mechanics, and reality itself, have been uncovered as experiments probe further into the quantum world. Now, as extreme computer miniaturisation reaches into the realm where quantum effects are at play, exciting new quantum technologies are emerging.

While we do not fully comprehend the sublime strangeness of quantum mechanics, we can begin to imagine, and even build, powerful new machines such as quantum computers, vastly more powerful than any current, conventional supercomputer.

Join the 2016 RSV Research Medallist, Professor Lloyd Hollenberg, who will introduce the latest developments in quantum technology and give an overview of the work involved with designing quantum computers and using individual, atomic-sized quantum sensors in biological systems. No prior knowledge of quantum mechanics assumed or required!

The RSV Medal for Excellence in Scientific Research will be presented to Professor Hollenberg on the evening by Dr Amanda Caples, Victoria's Lead Scientist.

#### ***About the speaker:***



Professor Lloyd Hollenberg is the 2016 winner of the Royal Society of Victoria's Medal for Excellence in Scientific Research, the Society's highest honour. His interests in quantum information science and technology range from the use of atomic quantum probes in biology to the design of architectures for full-scale quantum processors.

He is currently an Australian Research Council Laureate Fellow and was awarded the 2012 Walter Boas Medal, the 2013 Victoria Prize (physical sciences), and led the team that won the 2013 Eureka Prize for Excellence in Interdisciplinary Research.

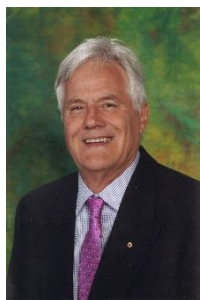
## President's Soiree

RSV Members, Partners and Guests are invited to join us after the presentation for our annual dinner, the President's Soiree, to celebrate the achievements of our Medallist and the work of the Society over the course of 2016. Registrations for the Soiree include a place at the lecture beforehand.



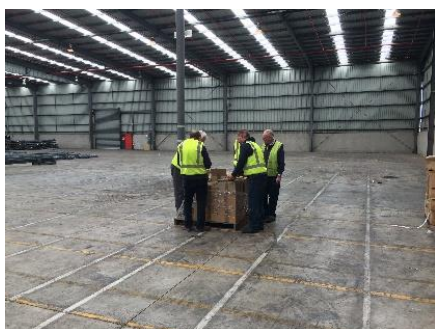
Places are strictly limited, **bookings essential!** Book online now at <http://ow.ly/CF60305GvnI> call or email the RSV office to secure your place: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au).

## From the President



The sun is setting on another productive year for the Society, with the last few months, as usual, being especially busy. As I write, the fortnight just past has seen one of my favourite events on our calendar — the evening when we welcome to the Society the very young science enthusiasts who won bursaries in the Science Talent Search (see Mike's write-up elsewhere in the newsletter). It's a lot of work for the office staff to coordinate but it all comes together in the last few days and it's wonderful to soak up the atmosphere.

We've also managed to disperse a dark cloud that's been hanging over the Society now for some years — what to do with our off-site library stocks. It was with heavy hearts that a small team of staff and volunteers had to make tough decisions on what to dispose of and what to keep out of the many hundreds of science journals. We were able to set aside many historic bound volumes to help with the refurbishing of the Von Mueller room next year, as well as retain a significant selection for the State Library. I'd like to record our grateful thanks to member Clive Wilmot, who provided free warehouse storage for the Society's collection for many years.



Our next event, the last for the year, is the Presentation of the 2016 RSV Medal, followed by the President's Soirée, at which I get to make my final address of my term in office. Four years have certainly gone very quickly. For all those members who can't attend the dinner, it remains for me to wish you the compliments of the season and a safe and rewarding 2017. Thank you all for your support of the RSV.

---

## RSV Outreach Program

### Migrant Science Communication Accelerator – New Program Launched!

We're delighted to announce the launch of a new Migrant Science Communication Accelerator with our partners [Cultural Infusion](#) and the [Australian Science Communicators](#), with the generous

support of the [Inner North Community Foundation](#).

At the Royal Society of Victoria, we often meet or hear about migrants to Australia with backgrounds in the sciences who have, for a variety of reasons, been unable to secure work related to their skill base and education. This is a lost opportunity for everybody.

With science literacy [evidently declining](#) among Australians, senior student science [participation rates dropping](#) and a [shortfall of teachers with a background in science and mathematics](#), it is more important than ever that we find ways to activate the scientists in our community to help engage, educate and prepare our society for the particular challenges of the 21st century; particularly our young people.

Not content with the anecdotal evidence, we seek to qualify and quantify the extent of the affected community here in Victoria through this pilot program. We are interested in hearing from any science and engineering-qualified migrants who have at least a Masters degree in their field, or an undergraduate science degree with relevant work experience, but who have struggled to find related work in Australia. Our intention is to purposefully (and gainfully) activate your knowledge and experience.

### *The Opportunity*



Each year, teachers around Australia engage specialist science communicators and educators to come into their schools and deliver specialist science programs. In this way, the school meets a variety of student curriculum goals that are beyond the capacity of the staffing profile or syllabus.

From 2017, schools in Victoria also have to deliver two new curriculum components — science as an international endeavour, and Intercultural Understanding.

This provides an opportunity to combine learning about science and learning about other cultures in a single session.



## The Program

Our pilot program will assist four Victorian, science-qualified migrants (three from Melbourne's North, in service of our commitment to our grant body) to tell their migration story while developing a science show that is both engaging and suitable for Victorian schools. We will train you to deliver it, and we then help market it to schools through [Cultural Infusion's Schools Program](#).

Mentorship by working science communicators is provided as well, alongside invitations to great science forums and events to help you connect with Melbourne's science community and stay in touch with the latest in scientific research and application.

Business training and assistance in setting up as a sole trader is included. If successful, we will seek to expand the program to train and deploy more eligible participants.

## Further Information and Applications

Applications can be made via [Cultural Infusion's website](http://culturalinfusion.org.au/science/) (<http://culturalinfusion.org.au/science/>), which includes eligibility, guidelines and avenues for further information. Please note the submission deadline of **5pm on 30 December, 2016**.

\* \* \*

## Very Young Scientists: Celebrating RSV Bursary Winners from the STAV Science Talent Search

*Thursday, 24<sup>th</sup> November*



JMSS Vice-Captains Rory McNab and Anna Musgrave with RSV Outreach Chair Helen Gardiner and President Bill Birch.

We were so delighted to once again welcome students from early primary through to mid-secondary school, their teachers and parents to the Society tonight, all winners of our bursaries through the 2016 Science Talent Search,

organised annually by the Science Teachers' Association of Victoria.

Kids from across the State (a particular hello to our travelling friends from Paynesville, Victoria!) were given excellent, inspiring presentations from graduating vice-captains **Anna Musgrave** and **Rory McNab** from the [John Monash Science School](#), reflecting on the opportunities their science studies have opened to them and their plans for a post-VCE future.



Importantly, our bursary winners were given an introduction to the work of Young Scientists of Australia, Melbourne Chapter by their President **James Salamy** (pictured left), offering a valuable opportunity to become

members of an active and social group of young people with a passion for science. The Society is currently making affiliation arrangements with YSA Melbourne to provide ongoing support for their efforts and activities in youth science promotion. Meanwhile, the YSA **Summer Science Camp** is [currently taking applications](#) from young people aged 17 – 20, from 7 to 12 January 2017.



Finally, we were treated to a characteristically hilarious yet horrifying performance from the always fabulous "Honest Conman," **Nicholas J. Johnson!** Nicholas (pictured above) is a wonderful performer who presents the "neuroscience of magic" for a crash course in critical thinking and the many ways in which our brain allows us to be "fooled." He provides school incursion modules "The Bad Science Show" and "Deceptology," which we very warmly recommend! More details are available from his website at <http://www.thebadscienceshow.com/>.

Congratulations again to all our wonderful bursary winners, and best wishes for your future journeys in science.

\* \* \*

## RSV Outreach - Can You Help?

A lot can happen when people align their interests and goals to achieve results together. The great majority of the Royal Society of Victoria's programs and initiatives are made possible through volunteers, collaborations, partnerships and brokering fruitful connections. However, we are keen to provide resources to those in need, particularly to support the further rollout and sustainability of a CoderDojo network across the State (mostly, equipment setup, extension program articulation and sourcing regional sponsors) and material assistance in science outreach and support for disadvantaged primary schools (equipment, scientist mentorship and teacher training opportunities).

If you have an idea for a program and an avenue to support it, we would be delighted to hear from you! Meanwhile, there are two very effective ways to lend your support to our current programs:

1. **Register your interest in volunteering** your expertise and network of colleagues to support Victorian learning communities. A call to the RSV Office is all it takes: (03) 9663 5259.
2. **Donate to the RSV Outreach Program.** Any small amount helps, as we ensure we get real value from our investment in Outreach projects, many of which simply need an initial boost to get underway. **The Royal Society of Victoria is a registered charity, and all donations are tax deductible.**

### Donations can be made to:

**Account Name:** The Royal Society of Victoria

**BSB:** 083-019    **Account No.:** 51-515-2492

**Reference:** Outreach + your surname

To ensure we allocate your donation correctly and can issue you with a tax receipt, please let us know when you have made a donation, either by calling the Office on (03) 9663 5259 or shooting us a quick email at [rsv@rsv.org.au](mailto:rsv@rsv.org.au).

## Nominations for RSV Membership

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

Mr **Colin Jeffrey ABBOTT**, Company Director

Mr **Michael SILVER**, Photographer

Mr **Andre COKER**, Student

Professor **Deborah COLVILLE**, Ophthalmic Surgeon

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 **9<sup>th</sup> February**.

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

## November Meetings in Review

We had ourselves a very lively [Innovation Week](#) this year, with three terrific events held at the Royal Society of Victoria from 7 to 11 November.

\* \* \*

### Presentations & Networking Breakfast: Genomics & Personalised Medicine.



Professor Kathryn North, Director of the Murdoch Children's Research Institute

We got underway with a wonderful launch at the Society on the morning of 7 November, hosted by our friends from the [BioMelbourne Network](#).

Following a networking breakfast, we had a pre-recorded launch address from the Minister for Industry, Innovation & Science Greg Hunt MP and live presentations from two top-notch speakers: Professor Kathryn North, Director of the Murdoch Children's Research Institute and Dr Ajeet Singh, Founder and CEO of [CNSDose](#).

Both demonstrated the fast-arriving future of "personalised medicine" for us all through low-cost genome sequencing, informed diagnosis and highly accurate drug prescription and delivery attuned to the individual. Prepare for a transformation in medicine!

\* \* \*



## Dr Andi Horvath: “Content is King” and Other Myths Around Science Communication

by Priya Mohandoss MRSV

On Thursday, 10<sup>th</sup> November, RSV welcomed Media Advisor and Podcast Producer, Dr Andi Horvath to enlighten those in attendance about the value of Science Communication for scientists and the wider audience as well as the knack of engaging others in science, whether they have an inkling of interest or prior background.



“Ambassadors for Science:” RSV President Dr Bill Birch, Dr Andi Horvath and RSV Councillor A/Prof Gavin Smith.

Dr Horvath emphasized that it is the context of information that is key, whether the type of delivery be podcast or long-form journalism, and that it needs to be communicated using the combination of scientific and critical thinking so that the audience can gain a better understanding of what is being raised instead of being entangled with trying to comprehend something foreign.

Presenting audiences with an opportunity to question and be curious is vital to approaching science communication, which Dr Horvath described as a “mindset” rather than a skill. While there is the need for the speaker to be upfront and enthused in order to get the audience inspired, they must also make certain that the audience are ‘shown how to think’ about topics that deal with science.

Ultimately, one needs to consider that it is all about providing an audience with information on stories that may be of interest to them, leaving

them with something to remember and share with others, which extends the impact of your communication. Further, for science communication to be effective for both scientists and journalists, scholars need to know how to tailor their language and be responsible for promptly fact-checking details with time-poor science writers prior to publication to ensure the message is delivered appropriately.



Dr Andi Horvath recalls us to high principles and the purpose of science communication: “Science is the best knowledge generation system we have - it frees us from superstition.”

All in all, it was a lively discussion with those present left with much to reflect upon.

*Editor’s note: grateful thanks to **Priya** for writing up this month’s lecture! We’re keen to hear from any of our members who’d like to reflect on Society activities for the benefit of those unable to attend. Please contact me if interested – Mike [ceo@rsv.org.au](mailto:ceo@rsv.org.au)*

\* \* \*

## Panel Discussion: Meet Science's Social Media Stars



Panelists Dr Alan Duffy @AstroDuff, Dr Euan Ritchie @EuanRitchie1, Dr Katie Mack @AstroKatie with MC Toni Stevens @MissToni

These bright faces belong to some of Victoria's most effective science communicators, “super-

users" of social media channels to engage a broad community in their work, garnering fresh opportunities for collaboration in, engagement with and development of their research projects.

Meet Dr Alan Duffy, Dr Euan Ritchie, and Dr Katie Mack, who joined MC Toni Stevens from Australian science media and public relations agency [Science in Public](#) to share their experiences, approaches, mindsets and hot tips for "keeping yourself nice" as both an ambassador for science and a decent human being in the dynamic sphere of social media.



In a far-ranging and insightful discussion, we canvassed practical suggestions on how to manage multiple channels of engagement, the virtues and drawbacks of the various platforms, advice on "knowing your [#hashtag](#)" and most importantly: don't feed the trolls!

Not all scientists are introverts, but for those who are; social media offers both an efficient and very 'real' interaction with a very large community of science-interested people, and also those many who are yet to be convinced or persuaded by what many in the science community regard as conclusive. Euan made the point "you can get an answer to your question, through peer review, in real time, through social media!"



As with Dr Andi Horvath's earlier presentation, the key take-home message was to tailor your messages to your audience and build trust for effective science communication; avoid adversarial exchanges, even in defence of science and the correction of misconceptions.

Grateful thanks to our wonderful panellists and MC, and our Innovation Week partners Science in Public, the [Australian Science & Innovation Forum](#) and the [Australian Academy of Technological Sciences & Engineering](#). One of the best panel and audience discussions of the year, and a great function to follow.

---

## A Science Maker Space at NCAT

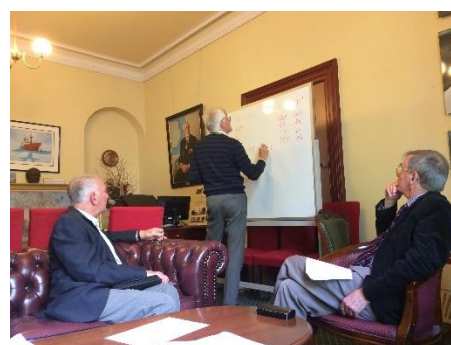
RSV members are warmly invited to bring the young people in their lives along to sessions convened by Martin Harris with a group of volunteer teachers and scientists at the Northern College of Arts & Technology's purpose-built maker space. The group will construct and conduct scientific experiments using common household items, industrial offcuts and tech components discarded as e-waste. Martin describes an opportunity for parents, grandparents and carers to pass on many practical skills that are no longer taught in the standard science curriculum.

For further details and registrations, please contact [martin.harris@biophotonics.com.au](mailto:martin.harris@biophotonics.com.au), or call 0412 342 846.

---

## 2017 RSV Council Elections

CONCORD and PROGRESS



A final reminder to members that nominations for positions on the RSV Council are due back to the RSV Office, attention to the Returning Officer, by no later than **3.30pm on Monday, 19<sup>th</sup> December**. Guidelines and forms were distributed in the November newsletter, and further copies are available through enquiry to the RSV Office: 9663 5259, or [rsv@rsv.org.au](mailto:rsv@rsv.org.au). We welcome your interest!



**Ellery Theatre, The Royal Society of Victoria, 8 La Trobe St, Melbourne**

All lecture details and bookings are available online from:

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

\* \* \*

- 9<sup>th</sup> February – Mr Tim Smith, Executive Director of Heritage Victoria, “Scanning the Ruins: Imaging the Shipwrecks of Port Phillip Bay”
- 23<sup>rd</sup> February – Professor Ian Woodrow and A/Professor Brad Potter, “Accounting for Carbon Storage in Trees”
- 9<sup>th</sup> March – **J E Cummins Oration** - A/Professor Sally Gras, “Dairy Science: Functional Food and Gut Health”
- 23<sup>rd</sup> March - Professor Miles Prince, “Targeting New Cancer Treatments”
- 13<sup>th</sup> April – No lecture (Easter Break)
- 27<sup>th</sup> April – RSV Annual General Meeting, featuring Professor Peter Doherty**
- 11<sup>th</sup> May – Dr Mark Norman, “Meeting Conservation and Park Management Needs in a Changing World”
- 25<sup>th</sup> May – Ms Rose Hiscock, “The Science Gallery”
- 8<sup>th</sup> June – Panel Discussion – “Exoplanets and Extra-terrestrial Life”
- 22<sup>rd</sup> June – **A W Howitt Lecture** - Dr Andrew Tomkins, “Meteorites and Cosmic Dust: Insights to the Early Solar System and Earth” *Joint GSAV Meeting*
- 13<sup>th</sup> July – **Joint ATSE Lecture** – To be advised
- 28<sup>th</sup> July – Professor James Warren & Professor Lynne Selwood, “Ripping Yarns: Two Lives in Science” (lunchtime)
- 17<sup>th</sup> August – 2017 Young Scientist Research Prizes (National Science Week)**
- 24<sup>th</sup> August – Professor Kate Smith-Miles, “Optimisation, Pattern Recognition, and Modelling of Complex Systems”
- 8<sup>th</sup> September – Professor David Dunkerley, “Drylands and Water Management”
- 28<sup>th</sup> September – Phillip Law Postdoctoral Award for the Physical Sciences Lecture**
- 12<sup>th</sup> October – Dr Thomas Oxley, “Stendrode: Enabling Thought-Controlled Prosthetic Limbs”
- 26<sup>TH</sup> October – Professor Paul Sunnucks, “Adaptation of Animals to Climate Change – Natural or Induced?”
- 9<sup>th</sup> November – Science Communication Lecture & Graduate Prize - Tanya Ha, “Science Writing: Finding the Balance between Head and Heart”**
- 23<sup>rd</sup> November – Very Young Scientists (Science Talent Search Bursary Recipients)**
- 14<sup>th</sup> December – RSV Research Medal Lecture & President’s Soiree**