



# 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...



**7<sup>th</sup> November:** Genomics & Personalised Medicine: Have we Arrived at our Destination? *2016 Innovation Week Launch Breakfast and Presentations with the BioMelbourne Network*



**10<sup>th</sup> November:** "Content is King" and other Myths around Science Communication. *Dr Andi Horvath, The University of Melbourne*  
*2016 Innovation Week Event*



**11<sup>th</sup> November:** Meet Science's Social Media Stars. *2016 Innovation Week Event*



**24<sup>th</sup> November:** Very Young Scientists. *Celebrating STAV Science Talent Search RSV Bursary Winners*

## December Advance Notice:



**8<sup>th</sup> December:** 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 & President's Soiree*

# November 2016 Newsletter

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## November Meetings

### “CONTENT IS KING” AND OTHER MYTHS AROUND SCIENCE COMMUNICATION - 2016 Innovation Week Event



The first November meeting of the Royal Society of Victoria will be held on  
**Thursday, 10<sup>th</sup> November 2016 at 7.00pm.**

**Speaker:** **Dr Andi Horvath**  
**Media Advisor & Podcast Producer**  
**The University of Melbourne**



The so-called information age we live in could just as well be called the “misinformation age”. The public awareness of science and capacity for critical thinking seems more important than ever before.

One key to the public understanding of science and scientific thinking is scientists’ understanding of the media. Insights into what gets on screen, on air, online or in print, and why and how, is useful for crafting tomorrow’s messages for various media and audiences.

There is a chorus of scientists saying they don’t have time for science communication or to ‘up’ their media skills. And why should they? Things get “dumbed-down” anyway, media get it wrong, and some people don’t respond to logic. However, researchers can overcome all of these issues. But be warned – some approaches will be counter intuitive and it will involve dispelling some myths around science communication. An important thought: are we now in an era where context is the new King?

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

Dr Andi Horvath is currently a guest lecturer for Science in the Media, a Podcast producer and Pod Hub Coordinator for the University of Melbourne.

#### **Seven things about Dr Andi Horvath:**

- Andi has a PhD in Medicine, an MBA and qualifications in Media and Science Communication.
- Andi won an international award for her podcast series *Access All Areas* made for Museum Victoria where she was a Senior Curator.
- Known as *Dr Andi*, she was a science producer and broadcaster on 3RRR for over 20 years and has also worked for ABC and SBSTV.
- She has produced exhibitions, videos, audio, public programs, training programs, blogs and articles for organizations including the University of Melbourne and CSIRO.
- She is a seasoned public speaker and has lectured and tutored in Science Education, Science Communication and Science in Society.
- As a former member of a Science Circus she is prone to exploding into interpretive dance when explaining the actions of molecules.
- Andi trains scientists in communication skills and mind-sets through her program Science Communication Gym ©.

**Eventbrite**

Places are strictly limited, **bookings essential!** Book online now at <http://ow.ly/kc1L305Gvi6> 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 lecture from 6.15pm, please register your attendance so we can anticipate catering requirements. **All most welcome.**

## Innovation Week 2016 – Events @ The Royal Society of Victoria



### GENOMICS & PERSONALISED MEDICINE: HAVE WE ARRIVED AT OUR DESTINATION?

#### Innovation Week Launch Event Networking Breakfast and Presentations

Monday, 7<sup>th</sup> November 2016 from 7.30 to 9.00am

##### Speakers:

**Professor Kathryn North**  
Director, Murdoch Children's Research Institute

**Associate Professor Ajeet Singh MD**  
CEO and Founder, CNSDose

The personalisation of healthcare is one of the biggest global drivers of innovation in medical technology and pharmaceuticals today. Advances in genomics have created opportunities to deliver patient specific information to tailor treatments to the individual in a way never before possible. The new genomics revolution is set to empower clinicians and patients to make informed decisions on care pathways – but how far have we progressed in terms of delivering on the promises of precise and personalised medicine?

The 2016 [Innovation Week](#) Launch at the Royal Society of Victoria, with a networking breakfast and presentations hosted by the [BioMelbourne Network](#). Limited places are available at **\$50 per head**. All proceeds go directly to fund Innovation Week 2016. Please register to attend online at <http://biomelbourne.org/event/innovation-week-launch-biobreakfast-genomics-personalised-medicine-arrived-destination/>



## MEET SCIENCE'S SOCIAL MEDIA STARS

### Presentations, Discussion and Networking Function

Friday, 11<sup>th</sup> November from 5:30pm to 8.00pm

Join us for a panel discussion with three scientists who have successfully used social media to build their profiles in science, and the profile of science in the community. They'll share their tips on how they made it work for them, what to post on what channels, which audiences you can reach, and how to deal with the trolls.

- Will a social media profile help you build your research career?
- What's the difference between Twitter, Facebook, Instagram and LinkedIn anyway?
- How do you use them to promote your work?
- Are you a #seriousacademic if you tweet?
- And what even is Snapchat?



If you're keen to raise your (or your organisation's) profile on social media, this is the session for you.

**scienceinpublic**

Register online for this free event, produced by [Science in Public](#) with the kind support of [Innovation Week](#) and the Royal Society of Victoria:  
<http://ow.ly/8lOm305Gvla>

## ABOUT INNOVATION WEEK

[Innovation Week](#) is an annual celebration of innovation in Science, Technology, Engineering, Mathematics and Medicine (STEMM) in Australia led by the [Australian Science and Innovation Forum](#) (ASIF) in partnership with the [Australian Academy of Technological Sciences and Engineering](#) (ATSE). Check out the full program at <http://innovationweek2016.org>.



Innovation Week 2016 aims to bring together people from across the STEMM sector together to connect professionals, encourage collaboration and celebrate innovation success. Support for emerging innovation and startups in STEMM returns important economic and social benefits, creating jobs of the future and improving quality of life. A culture of innovation fosters a progressive, vibrant ecosystem in which to live and work.



Australian Science & Innovation Forum



## RSV Outreach Program

### Migrant Science Communication Accelerator

This month we are readying the launch of a new initiative with partners [Cultural Infusion](#) and the [Australian Science Communicators](#), with welcome grant support from the [Inner North Community Foundation](#).

The Migrant Science Communication Accelerator aims to identify migrants with a Masters-level degree (or equivalent training and experience) in a STEM discipline who have struggled to apply their specialist knowledge and training to an employment role in Australia.

Each year, schools around Australia engage professional science communicators to come into their schools to deliver specialist science programs that are outside the expertise of the teachers.

From 2017, schools in Victoria also have to deliver two other specialist components – science as an international endeavour, and Intercultural Understanding.

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

#### What we will offer



Our new program assists science-qualified migrants to develop a science show that is suitable for schools, trains them to deliver it, and we then help market it to teachers through [Cultural Infusion's Schools Program](#).

Mentorship by professional science communicators is also provided, alongside invitations to great science events to help participants connect with the Melbourne science community.

#### How to apply

Eligibility and application guidelines are available online from <http://culturalinfusion.org.au/science/>

- further queries may be directed to [mdouglas.m@paninternational.com.au](mailto:mdouglas.m@paninternational.com.au).

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

**Thursday, 24<sup>th</sup> November from 6pm**

Once again we will be welcoming bursary winners, families and teachers to the Royal Society of Victoria for an evening of presentations, entertainment and celebration! This year we have 50 young recipients of our annual RSV bursary through the long-standing Science Teachers Association of Victoria competition, all of whom are invited to join us on the evening of Thursday, 24<sup>th</sup> November to hear from science entertainer Nicholas Johnson, two captains from the John Monash Science School on future pathways for students of science and an introduction to our outreach program.



Dr Bill Birch with two of the 2015 winners

\* \* \*

### Science in my World: RSV Support for Schools Experiencing Disadvantage



Chum Creek Primary School

We are so delighted by progress made on the Chum Creek Primary school's astronomy

program, set in motion by Principal Michael Corr and teacher Kerry Thomas through direct consultation with and assistance from RSV Outreach Committee member **Pam Borger** and brokerage efforts by our Committee Chair, **Helen Gardiner**.



The Mt Burnett Observatory (pictured above) is located in the Dandenong Ranges, about 50 kilometres south of Chum Creek, which is to the north of Healesville. It took about six months to get the weather just right, but Mt Burnett President James Murray was effusive when Chum Creek came to look at the stars:

*It was a GREAT night. The whole school community turned out in force - a BBQ helped that. As for numbers, I think there are about 50 kids (let's say 30+ families) in the school: add parents and a clear night and BBQ, stir well and you can guess the result.*

*One aspect of the event which impressed me was the work that one of the teachers, their 'science' teacher had got behind the project (she's had six months of cloudy weather in which to teach it.) A number of children, even at grade 4 level were familiar with the order of planets in the Solar system, the rocky nature of Mars, the toxic atmosphere of Venus, the nature of Saturn's rings and that Pluto was a dwarf planet.*

*Quote 1: "It looks like a big flat ring, but it's really lots of rings"*

*Quote 2: "Mars has the hugest volcano. It's really huge."*

*Quote 3: "Venus is just so bright."*

*Other numerous quote: "Awesome ..."  
"Cool ..." "Amazing ..."*

*Quote from one mother: "I grew up in the town where Copernicus was born. Not many people know about Copernicus, which is such a shame ..."*

*A good night was had by all thanks in good part to the huge contribution made by Jacquie and Braeden (Thanks so much, guys!)*

*Good things are worth waiting for!*

We couldn't agree more! Warm thanks to James, Jacquie, Braeden and our friends at the Mt Burnett Observatory for making the Chum Creek Primary community so thoroughly welcome.

The Society is planning a visit to the Mt Burnett Observatory as a part of our excursion program in 2017. Meanwhile, this volunteer-run, not for profit organisation is in desperate need of a new telescope to continue to bring astronomy to the general public. They are running a fundraising page at <https://www.gofundme.com/28ynkzc4> - please offer them your kind support.

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**CoderDojo Bendigo**



Interest in the CoderDojo Victoria initiative continues to grow with a jumbo program starting up at the [Discovery Science & Technology Centre](#) in Bendigo on 8<sup>th</sup> October with a vigorous enrolment of 42 commencing participants! As parents accompany the students, we're looking at group sizes of around 90 and as such, the group leaders are running additional sessions to keep the group sizes manageable and fun for all.

CoderDojo programs are free for participants. Support from voluntary mentors has been strong, with professional computer programmers, app developers, "internet of things" developers, mechatronics engineers, robotic engineers, academics and teachers committing their assistance. Importantly, there are a number of non-technical mentors committed to supporting administration of the Bendigo Dojo.

All this is due to the wonderful efforts of Marc Blanks, the Regional Project Leader of the new Bendigo Tech School, and Jonathan Ridnell of the Bendigo Discovery Centre; importantly, the initiative has received partnership support from the Department of Education and Training, the Goldfields Local Learning and Employment Network (Anne Brosnan), LaTrobe University (Rob Stephenson) and committed community members like Nick Carrigan.

As ever, our dedicated Outreach Committee member **Martin Harris** has been instrumental in providing mentorship, while a generous donation

from RSV member **John Harrison** has allowed us to contribute \$1,000 towards the startup costs of this impressively enthusiastic learning community. Best wishes to [CoderDojo Bendigo](#)!



Young coders, mentors and parents inspired to have some fun at the Bendigo CoderDojo

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### 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) and material assistance in science outreach and support for disadvantaged primary schools (equipment, scientist mentorship and teacher training opportunities).

There are two very effective ways to lend your support to our 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. Donations to the Royal Society of Victoria 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).

## Genomics: National Insights of Australians



Genomics: National Insights of Australians

**How much do you think a person's genes contribute to their personality, fitness and other attributes? What are your thoughts about genetic tests that can be bought online?**

The research team at Genioz wants to hear from members and friends of the Royal Society of Victoria, even if you don't know much about genetics or genomics. Explore your thoughts by completing their survey at [www.genioz.net.au](http://www.genioz.net.au). You may also win a prize!

*Genomics: National Insights of Australians* (or GeNIOz) is a research study that aims to understand what people think about personal genomic testing and their expectations in this area. The study is being conducted by a multidisciplinary team from the Murdoch Childrens Research Institute, University of Melbourne, Walter and Eliza Hall Institute, University of Sydney, Garvan Institute of Medical Research, Sanger Institute (UK) and University of Ottawa (Canada).

Genioz are asking RSV members to complete our survey, and also tell your family, friends and networks about the survey. We want to hear from as many people as possible, representing as many views as possible. These findings will help us shape policy and information around personal genomic testing for members of the general public and for health professionals.

More information, and contact details, at [www.genioz.net.au](http://www.genioz.net.au), [www.facebook.com/geniozstudy/](https://www.facebook.com/geniozstudy/), or [twitter.com/Genioz\\_study](https://twitter.com/Genioz_study).

## Nominations for RSV Membership

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

Mr **David BAGNARA**, Student  
Mr **Braden John KIDD**, Student  
Dr **Brad RUNDLE**, Science Teacher



Mr **Tim THOMPSON**, Science Teacher  
Mrs **Wendy KEEN**, Science Teacher  
Mrs **Anne Noonan**, Science Teacher  
Dr **Gregory Robert CROCETTI**, Publisher & Science Educator  
Mr **Connor Taylor GORDON**, Student  
Mr **Lawrence Robert HANSON**, Astrophysicist

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 **8<sup>th</sup> December**.

Recently elected members who have not yet signed the Society's membership book are invited to attend the **10<sup>th</sup> November** meeting to be formally welcomed as members. Please inform the office if you plan to attend.

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## 2016 RSV Medal for Scientific Excellence – Professor Lloyd Hollenberg



The Royal Society of Victoria is delighted to congratulate Professor Lloyd Hollenberg (pictured left), this year's winner of the prestigious RSV Medal for Excellence in Scientific Research, the highest award the Society bestows on research active Victorian scientists.

Currently the Deputy Director of the [Centre for Quantum Computation and Communication Technology](#), Professor Hollenberg is a key figure leading the development of Australian-based quantum computer and quantum sensing technology. He is an integral part of the international effort to understand and apply this field of inquiry, one of the few scientists to have made important breakthroughs in both theoretical and experimental areas.

Reflecting on Professor Hollenberg's nomination in this year's category of "Physical Sciences," the Society's President Dr William Birch AM expressed high praise for Professor Hollenberg's public promotion of science and outreach activities in particular. "Lloyd's ground-breaking contributions to the complex area of designing and fabricating full-scale quantum computers are very impressive and he has an exemplary publication record. Ultimately, what really put him ahead of a very strong field of nominees this year was the vigour of his public advocacy and promotion of science through

outreach activities and a commitment to science communication across the media."

An ARC Laureate Fellow and the inaugural Thomas Baker Chair with the University of Melbourne's School of Physics, Professor Lloyd Hollenberg has partnered, collaborated and influenced a very large community of practice in establishing Australia's experimental programs and building up the successful Centre for Quantum Computation and Communication Technology.

"Lloyd has displayed outstanding leadership in science and is a true all-rounder. Not only has he contributed enormously to his field as a scientist, but he has also fostered a greater understanding of science through his public engagement with the community, while training and mentoring a high-achieving group of early career researchers," said Dr Birch. "His many previous awards and honours have rightly celebrated the merits and impact of his research."

Professor Hollenberg will deliver the 2016 RSV Medallist Lecture on the evening of 8 December (details in the next item) and will be awarded the Medal by **Dr Amanda Caples, Lead Scientist of Victoria**.

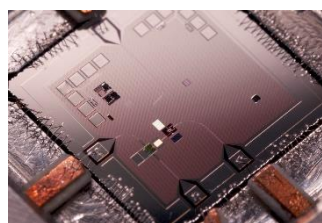


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## The 2016 RSV Medal for Excellence in Scientific Research: Lecture, Award & President's Soiree

Join us for the RSV Medal Lecture, the culminating event of 2016, and then celebrate a marvellous year with fellow members at the annual President's Soiree!

### Quantum Information Technology: from the Spooky World of Quantum Physics



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!

**Eventbrite**

Book online now at <http://ow.ly/CF60305Gvnl>, or call or email the RSV office: 9663 5259, [rsv@rsv.org.au](mailto:rsv@rsv.org.au). All most welcome.

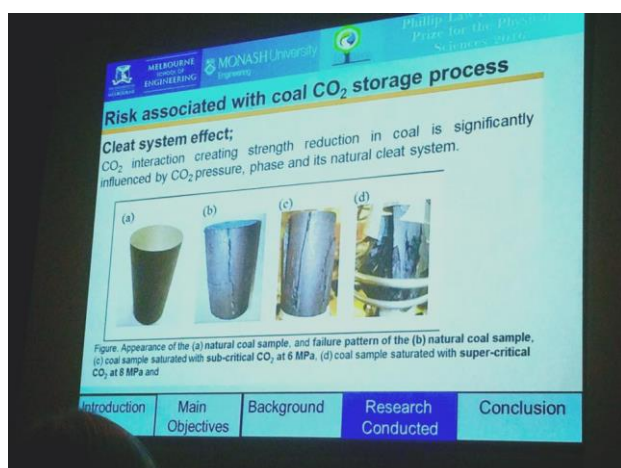
## Dr Samintha Perera: "Carbon Sequestration: are Deep Coal Seams the Answer?"

### 2016 Phillip Law Postdoctoral Prize Lecture & Award, 27 October



We received a thought-provoking introduction to the work of this year's Phillip Law Postdoctoral Prize winner, Dr Samintha Perera last Thursday night, exploring the "science of the possible!" Samintha has produced theoretical and

empirical models to test the viability of injecting greenhouse gas carbon dioxide into un-mineable "deep coal seams," both as a sequestration measure and a method for extracting the less volatile methane compound from the process for commercial applications to offset costs.



Dr Perera's research determined the injection of pressurised, super-volatile CO<sub>2</sub> at these depths causes the coal mass to swell, reducing permeability, with the subsequent increase in injection pressure required causing the mass to fracture along its natural cleats, compromising its

structural strength and potentially allowing the gas to escape.

Further chemistry work may reveal a process to mitigate these risks and constraints, but for now, this research presents a valuable exercise in demonstrating the limitations of one possible avenue for sequestering carbon in a time of anthropogenic climate change.



While now tenured as a Lecturer with the Melbourne School of Engineering, Dr Perera attained her PhD at Monash University in 2012 and secured postdoctoral fellowships at her alma mater. It was wonderful to welcome one of her PhD supervisors, Professor Ranjith Pathegama Gamage and colleagues from the Monash Faculty of Engineering (pictured above) to the Society.

The Society offers congratulations once again to Dr Samintha Perera on her Prize win, made possible by the generous bequest of Dr Phillip Garth Law AC, CBE, with best wishes for her continuing success in the field of geomechanics.

## Launch of Eucalypt Australia



### 3 Million Blue Mallee eucalypts clear to the horizon.

On 14<sup>th</sup> October, we were delighted to attend the launch of [Eucalypt Australia](#), a rebranding and refocussing of the conservation, education and research grant work of our partner the Bjarne K Dahl Trust. Held at the historic Eucalypt Museum in Inglewood, north of Bendigo, we found



ourselves in the midst of an extensive new plantation of Blue Mallee eucalypts, a high oil-bearing species with specimens especially developed and selected from seed by the University of Melbourne's Professor Ian Woodrow.



**Then, as now: Bosisto's Distillery**

The plantation is the work of local company FGB Natural Products, producers of the familiar Bosisto brand. RSV historians will recognise the significance of Joseph Bosisto and his productive friendship with one of the Society's foundational scientists, botanist Baron Ferdinand Von Mueller. It was a particular pleasure to meet company owner Peter Abbott and daughter Tegan, Executive Director of FGB natural products, who generously provided a tour of their plantations and their gorgeous old distillery, secluded in the state forest and still pushing out the majority of their oil product using an old 19<sup>th</sup> century boiler! Modernisation is on its way, but what a treat to see the old distillery in action.



**Distillation process**

The launch included presentations from Victorian MPS Maree Edwards and Danielle Green, and most significantly included an announcement by the Australian Academy of Sciences [Primary Connections](#) head, David Kellock, of the official release of "Among the Gum Trees," a primary school science teaching package developed with the freshly-launched Eucalypt Australia and funded for rollout to 200 disadvantaged primary schools across Australia.

Thanks to the FGB company for making everyone so welcome, and congratulations to our

friends at Eucalypt Australia on their excellent work promoting knowledge and utility of Australia's iconic trees and a wonderful launch event.



**Primary Connections head David Kellock with Maree Edwards MP, Danielle Green MP and students and staff from Inglewood Primary School**

## Victoria's New Lead Scientist

We were very pleased to welcome the new Lead Scientist for Victoria, Dr Amanda Caples to the Society on 19 October to learn more about this ever-evolving role. Dr Caples is currently engaged with convening scientists and science around the key economic and resource issues facing our State. It's a vital role, sourcing and examining robust evidence in support of decision making and government investment in new initiatives.



**Dr Bill Birch and Dr Amanda Caples**

We look forward to working with and supporting the role of the Lead Scientist with the assistance of Victoria's science community. Meanwhile, we're delighted Dr Caples will be joining us on 8 December to present Professor Hollenberg with this year's Research Medal! Come along and gain further insight to Amanda's role.



## Ada Lovelace Day: Celebrating Women in STEM

A truly excellent event coalesced from the efforts of the RSV's amazing partners, in particular the two Local Learning and Employment Networks (LLENs) adjacent to our CBD region.



A diverse and engaged audience of young women in the Ellery Theatre for Ada Lovelace Day

**Edward Dunstan** (Inner Eastern LLEN) and **Celia Bich Tran** (City LLEN) brought together a wonderful group of organisations and individuals committed to the inclusion and participation of



Building, Coding & Racing Robots in the Burke & Wills Room

women and girls in Science, Technology, Engineering and Mathematics, firing up a terrific audience of senior secondary students, their families and teachers in activities all over the RSV building on the evening of 12 October, celebrated internationally as **Ada Lovelace Day** in honour of the first mathematician to create an algorithm for use by a mechanical computer, the Analytical Engine, in the early 19<sup>th</sup> century (we recommend reading all about Ada – she's fascinating: <http://www.biography.com/people/ada-lovelace-20825323>).

[Engineers Without Borders Australia](#), [Robogals](#) and [Code Like a Girl](#) ran super-fun sessions on coding and robotics in several rooms, alongside presentations from some incredible students, and guidance and inspiration from a remarkable

concentration of youth and "Women in STEM" focussed organisations and individuals.

Thanks to all involved for a fun and inspiring evening. There are too many terrific photos to include here, so get along to see the full set at <https://www.facebook.com/royalsocietyvictoria/posts/613464818814795> !



Collaborations make great things happen!  
From rear left: Leonie Walsh (former Vic Lead Scientist), Sid Verma ([BrainSTEM](#)), Edward Dunstan ([Inner Eastern LLEN](#)), Atlanta Colley (MC, Public Health Educator/Performer), Calum Field and Olivia Noto ([Foundation for Young Australians](#)), Sophia Frentz (RSV Councillor, [Women in Science & Engineering](#)), Celia Bich Tran ([City LLEN](#))



Coding in the Von Mueller Room

## Growing Tall Poppies Symposium Creating Science Minded Citizens of Tomorrow



Our collaboration with the Growing Tall Poppies Program has clocked up a year, with the second annual symposium held at the Society on 14<sup>th</sup> October.

The initiative of RSV member **Dr Eroia Barone-Nugent** (pictured left), this partnership - based program aims to recognise and foster further development of promising senior secondary students in the sciences, with

an aim of retaining more talented young Australians in the science curriculum and future STEM workforce, particularly women.



**"Junior Tall Poppies" – from left, award winners Holly Griffin, Kirsten Arnold, Javira Altmann, Gemma Quinn and Samantha Thomson.**

The program also recognises the outstanding leadership of science teachers and offers further professional development. Each year at the Symposium, a finalist group of students and teachers receive awards for their efforts in leading science-based activities in their learning communities.



**"Teacher Tall Poppies" – from left, award winners Anne Noonan, Dr Brad Rundle, Wendy Keen and Tim Thompson.**

This year, a three-way collaboration between the [Growing Tall Poppies Program](#), the Royal Society of Victoria and [Young Scientists Australia \(Melbourne\)](#) provided an opportunity to acknowledge the award winners at a special ceremony, then provide a year's membership of the RSV (for teachers) and YSA (for students) to foster enduring connections with Victoria's science community.

We also welcomed a broader community of science teachers and students for professional development and extension on the day, undertaking leadership training with YSA Vice-President Tim Newport (student award winners) and school leadership consultant [Greg Flattley](#) (teacher award winners), a module on "Making Physics Fun" with [FlySCI!](#) founder Dr Zara Dennis and hands-on science activities for

students with Alan and Jemma from Monash University's [PrimeSCI!](#) program.



**Tim Newport and Jessica Soares from YSA (Melbourne)**



**Educational Leadership consultant Greg Flattley with award winner Tim Thompson and colleague**

The day began with an inspiring keynote address from Jacqueline Savage, founder and director of [MedCorp Technologies](#) and winner of the [2016 Emerging Women in Leadership Award](#) from the BioMelbourne Network. It was particularly poignant to learn of how Jacqui's training as a product design engineer enabled her to take purposeful action as a survivor of cancer, recognising the need for a wearable patient monitoring product that improves outcomes and survival rates during oncology and, most importantly, possessing the STEM skills to make her remote drug delivery and monitoring device concepts a marketable reality.



**MedCorp Director Jacqui Savage**

Grateful thanks to all our partners, staff and RSV Councillor Sophia Frentz for bringing the day

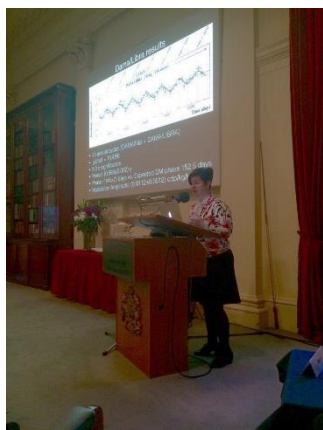


together so successfully, and best wishes to the award winners for their continuing growth and success in science community leadership.



Award winners with Dr Eroia Barone-Nugent (rear left) and RSV Councillor Sophia Frentz (rear right).

## Dark Matter: a Southern Hemisphere Perspective



We've had some excellent audience attendance numbers this year, and Professor Elisabetta Barberio's presentation (pictured left) on the hunt for dark matter in a gold mine in Stawell was certainly no exception! A diverse crowd of curious individuals

filed in on 13 October to be treated to a grand tour of the theoretical nature of the mysterious dark matter which, with dark energy, makes up almost all the substance of the known universe, but is thus far undetectable.



"Physics you say"

The SUPL lab is in its early stages of development, with construction of a "clean lab" underway over the coming year to attempt to replicate results from a sister laboratory in Italy, the Laboratori Nazionali del Gran Sasso (LNGS).

Professor Barberio explained that detecting a dark matter particle in our region of space would require lining up "a light year of lead" – the underground detection process is designed to filter out the background radiation produced by cosmic rays to get a clean signal of the anticipated particles.



The current Stawell Underground Physics Laboratory (SUPL), in stifling conditions, 100 metres underground

To further reduce the measured background radiation, the detectors are placed inside massive shield able to adsorb the external environmental radiation; in addition all the employed materials, as well as the detector itself, are characterized by a very low content of residual radioactive isotopes. Various experimental solutions and detector configurations have been developed specifically by each experiment to further reduce residual background. The experiments carried out in the LNGS use different target materials and exploit different approaches.

A model independent approach, based on the study of the time dependence of the Dark Matter signal, the so-called "Dark Matter annual modulation signature" is exploited; this approach has the merit to be model independent (i.e. no hypothesis on the Dark Matter nature and interaction is needed) and to require the satisfaction of many specific peculiarities offering an unambiguous signature for Dark Matter. On the other hand, other approaches are followed by various experiments in which hypothesis on the nature of the Dark Matter particle interaction are required. This is the case of experiments that apply rejection procedures of the electromagnetic rate, assuming the Dark Matter signal to be present only as nuclear recoils.

The SUPL facility will be a Southern Hemisphere location from which to correlate the results at LNGS. If the signals correlate: "we've nailed it."

A terrific presentation of a wonderfully exciting project with amazing support from government,

local industry and the Stawell community! RSV Councillor and physicist Viktor Perunicic (pictured right with Bill Birch and Elisabetta Barberio) offered a vote of thanks, congratulating Professor Barberio on transmuting “a light year of lead into a gold mine!”



Fulsome and fascinating background on this exciting Victorian-based, international collaboration can be found in the recent feature piece written for SBS science by Lisa Clausen, titled [Digging for Dark Matter](#).

## RSV Council Elections: 2017-18

### The Democratic Moment

Here we are again - so many elections this year! A Federal contest, and most of us are only just clear of the Victorian municipal council process. It would be easy to declare democratic fatigue, however we have no such luxury: this Council election marks a significant moment for the Royal Society of Victoria as we elect members to roles as Office Bearers and Councillors, many of whom will be appointed to Special Positions (Chairs of our committees). We now look to our broader membership for leadership succession.



As of the next AGM in April 2017, we will be bidding a sad farewell to long-standing Councillors **Professor Sandra Rees** (Science Program), **Mrs Helen Gardiner** (Science Outreach & Partnerships) and **Dr Mark Williams** (Publications, Collections & Records). **Dr Viktor Perunicic** was recently welcomed to Council as an ad-hoc appointment, filling the vacancy left by the sad passing of Professor Graham Burrows earlier in 2016; this vacancy also expires at the next AGM, but Viktor is eligible to be nominated in the coming election. **Dr Peter Baines** (Policy &

Communications) ends his initial consecutive, two-year term and is also eligible to renominate.

Significantly, we farewell our long-standing Honorary Treasurer, **Mr Norman Kennedy**, and **Dr William Birch** will be finishing his energetic four-year term as President. Both have provided sustained and outstanding leadership of the Society. With Bill moving to the Immediate Past President role, we must also farewell the experience, keen intellect and wise counsel of **Professor Lynne Selwood**, who will nonetheless continue her significant contribution to the Society as one of its Trustees.

I am indeed grateful to be working with a talented and committed Council in developing and working towards fulfilment of the Society's function and goals and extend my particular thanks to those colleagues who will be finishing their current tenure of 8 years of continuous service governing the RSV. All have generously contributed their time and expertise with enormous integrity, and we all owe each of them our gratitude for their dedicated work.



Echoing Bill's words in earlier newsletters, **we are keen to ensure we maintain a talented, diverse Council** and particularly encourage **women** in our membership with an interest in gaining further experience in governance and leadership to seek nomination. Members from “**Culturally and Linguistically Diverse**” backgrounds are also warmly encouraged to participate and **help us to more purposefully connect with diverse Victorian communities**. Members who are starting out in their professions or are mid-career are also encouraged to contribute to **ensure we respond to the breadth of interests and priorities facing our members at different life stages**.

There are exciting opportunities for the Society's relevance, growth and increased activity ahead, and we are sincere in our commitment to secure a talented, representative base on our governing body to help guide us through “interesting times!”

Nomination guidelines and forms are circulated as the final pages of this newsletter, and are also available from the RSV Office. Please consider putting your name forward, or encourage a talented fellow member to nominate.

- **Mike Flattley, CEO**





**CALL FOR NOMINATIONS:  
RSV COUNCIL ELECTION FOR 2017-2018**

**Nominations are hereby called for the election of the following positions for the 2017-18 Council:**

**President, Vice-President, Honorary Treasurer, Honorary Secretary and Five Ordinary Councillors**

Three Office Bearers and up to five Ordinary Members of Council for 2017 and 2018 will be elected by postal ballot closing at 3.30pm on **6<sup>th</sup> March 2017**. The elected Councillors will take up office from the Annual General Meeting to be held 27<sup>th</sup> April, 2017. All current 2015-16 Councillors will continue until that date.

**Note:** *the following Ordinary Councillors are not required to re-nominate as their two-year term continues through 2017: A/Prof Gavin Smith, A/Prof Robert Day, Dr Kevin Orrman-Rossiter, Ms Sophia Frentz, and Mr Andrew Davison. The following officers are not required to re-nominate: Mrs Nicola Williams, Secretary (elected 2016 – 7). Dr William Birch will adopt the role of Immediate Past President upon conclusion of his current term of President at the 2016 AGM on 27<sup>th</sup> April, 2017.*

**Note:** *Rule 22 (3) Council shall consist of no more than ten ordinary members of Council, five of whom shall be elected to take office in odd-numbered and five in even-numbered years, from whose number Council shall appoint persons to such Special Positions as shall be determined by Council from time to time to be necessary for the proper conduct of the Society's business.*

**Note:** *In 2017/8 the Special Positions will be the Chairs of the following Council Committees: Membership & Fundraising; Publications, Collections & Records; Science Programme; Science Outreach & Partnerships; Science Policy & Communication; Awards & Honours.*

**Note:** *The Returning Officer for the 2017-18 RSV Council Election will be Emeritus Professor James Warren.*

The Nomination Form is distributed with this Notice. It must be returned, attention to the Returning Officer, along with the nominee's 200 word statement by no later than **3.30 pm, Monday, 19<sup>th</sup> December 2016**.



**Nomination criteria & guidelines:**

1. Nominees for Officer or Councillor Positions must be Financial Members of the Royal Society of Victoria at the closing date of nominations and, in accepting nomination, undertake to maintain their RSV membership status throughout the election process and any subsequent tenure on the RSV Council.
2. Nominations may only be made and seconded by Members of the Society who are financial at the closing date of nominations.
3. A member may be nominated for only one Officer or Councillor position.
4. The nomination, including the consent of the candidate, must be accompanied by a statement of not more than 200 words in length prepared by the candidate or the nominator. Any statement exceeding 200 words will render the nomination invalid.
5. Each statement must be submitted on plain paper; company or business letterhead will not be accepted. **An electronic copy as a Word document must also be lodged with the Returning Officer via: [rsv@sciencevictoria.org.au](mailto:rsv@sciencevictoria.org.au)**
6. All nomination forms and statements must reach the Returning Officer, c/o The Royal Society of Victoria, 8 La Trobe Street, Melbourne 3000 **by 3.30 pm on 19<sup>th</sup> December 2016**, this being the closing time and date for nominations.
7. A candidate may withdraw from the election for any of the positions for which he or she has been nominated.
8. In the event of uncontested positions, the Returning Officer will declare the results for those positions immediately; and state that an election for these positions is not required. Results will be published on the Society website and in the Newsletter distributed at the end of January 2016.
9. If more than one nomination is received for any Officer, the Returning Officer must conduct an election for that position.
10. If there are more nominations than the number of vacant Ordinary positions of Council, the Returning Officer must conduct an election for all of the vacant positions.
11. A notice of the calling of an election and ballot papers will be circulated to financial members with the Newsletter in late January 2015. The Notice will be placed on the Society's website and on the notice board in the Society's premises displaying the nomination forms.
12. The notice of the election and Ballot Paper sent to members will be accompanied by the nominee's 200 word statement. These will be the only election materials authorised by the Society.



**NOMINATION FOR ELECTION TO RSV COUNCIL 2017-2018**

We hereby nominate \_\_\_\_\_

of \_\_\_\_\_

who is a financial member of the Society, for the position of (CIRCLE ONE):

**President**

**Vice-President**

**Honorary Secretary**

**Honorary Treasurer**

**Ordinary Councillor**

I consent to the above nomination.

Signature of Candidate \_\_\_\_\_ Date \_\_\_\_\_

I submit with this nomination form a Statement not exceeding 200 words in length to be displayed on the Notice Board in the Society's premises and website and if a ballot is necessary, circulated to the members. This Statement is a mandatory part of the nomination requirement.

**Nominated by:**

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

**Seconded by:**

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

This nomination must reach the Returning Officer by **3.30 pm on Monday, 19<sup>th</sup> December 2016**, care of the Royal Society of Victoria, 8 La Trobe Street, Melbourne, Victoria 3000. **Please check the nomination criteria and guidelines to ensure your submission complies with all requirements.**