

The Royal Society of Victoria

Promoting Science.

PATRON: The Hon Linda Dessau AM
Governor of Victoria

PRESIDENT: Dr William Birch AM

Headlines...

12th May: Continental Loss: The Quest to Determine
Antarctica's Contribution to Sea-Level Rise

13th May: Field Trip – Peter Doherty Institute for Infection
& Immunity

26th May: Science in the State's Interest: the Victorian
Precursors to CSIRO (Joint lecture with the Royal
Historical Society of Victoria)

June Advance Notice:

9th June: Researchers Behaving Badly: Misconduct in
Science

23rd June: The Age of Victorian Volcanoes

May 2016 Newsletter

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May Meetings & Events

CONTINENTAL LOSS: THE QUEST TO DETERMINE ANTARCTICA'S CONTRIBUTION TO SEA-LEVEL RISE



The first May meeting of the Royal Society of Victoria will be held on
Thursday, 12th May 2016 at 7.00pm.

Speaker: **Professor Matt King**
Professor of Polar Geodesy & ARC Future Fellow
University of Tasmania

For over 50 years scientists have been working to understand Antarctica's contribution to sea level. For much of this time there has been disagreement about whether this massive ice sheet is even growing or shrinking. In 2012, advances in data analysis and computer modelling resulted in the first reconciled estimate of change being achieved. This showed that Antarctica is increasingly contributing to sea-level rise.

Join the University of Tasmania (UTAS) Professor of Polar Geodesy, who will explain some of the major advances that led to this reconciled estimate and highlight some of the fascinating things we can learn about Earth from the vantage-point of Antarctica; these take us from hundreds of kilometres above Earth's surface to hundreds of kilometres below, and from present-day ice sheet changes to those that happened 20,000 years ago and, finally, to the uncertain future of this vast reservoir of water.

About the Speaker:

Professor Matt King works within the Surveying and Spatial Sciences group, forming a part of UTAS researchers working on solid earth geophysics and geodesy. In particular, his work focuses on the use of geodetic tools to solve problems related to Earth geophysics, notably sea-level change, polar ice mass balance and Earth deformation. He also seeks to advance the accuracy and precision of those geodetic tools (e.g., Global Navigation Satellite Systems (GNSS/GPS), GRACE and SLR).

His research currently encompasses four broad areas: i) tidal and hydrological forcing and response of ice streams and ice shelves; ii) measurement and modelling of glacial isostatic adjustment in Antarctica for understanding previous and current ice mass changes; iii) improved observation of 21st century sea level change and present-day polar contributors; and iv) observation of the global water cycle at large spatial scales.



Book online now at <http://ow.ly/4n69sr>, call or email the RSV office to secure your place: 9663 5259, rsv@sciencevictoria.org.au. If you plan to join us for refreshments prior to our lecture from 6.15pm, please register your attendance so we can anticipate catering requirements. **All most welcome.**

SCIENCE IN THE STATE'S INTEREST: THE VICTORIAN PRECURSORS TO CSIRO

2016 Joint Lecture with the Royal Historical Society of Victoria



The first May meeting of the Royal Society of Victoria will be held on
Thursday, 26th May 2016 at 7.00pm.

Speaker: **Dr James Waghorne**
University Historian, the University of Melbourne

When Australian Prime Minister Billy Hughes announced his government's intention to establish a Commonwealth Scientific Research Institution in 1916, he famously declared that science would 'cure the diseases of the body economic and be its striking and producing power'. Hughes' defence of scientific utility was optimistic, but it reflected an earlier enthusiasm from state governments for scientific research, most notably from Victoria.

From 1907 the Victorian government funded a series of research grants at the University of Melbourne, the first dedicated research funding, which supported a series of notable researchers to undertake a range of interesting projects. Universities used these projects to promote the capacity of universities to make practical contributions to the wider economy, and to advance knowledge. The newly federated Australia thus enjoyed a position at the forefront of scientific and intellectual advancement in the early twentieth century.

Such a program was not contemplated when the University of Melbourne was established fifty years earlier. Science graduates remained very low throughout the nineteenth century. However, the twentieth century marked a profound shift, and even in the context of very lean university budgets, money was found for research.

Some projects supported under this scheme were of international significance, such as Henry Grayson's pioneering research into micro-ruling machines, Gustav Ampt's research into soil physics and fertilisers, or Ernest Hartung's work on ferric salts in sulphuric acid. Many others were distinctly Australian, such as Georgina Sweet's work on livestock endoparasites, Freda Bage's work on Australian earthworms, or A.W.D. Robertson's anatomical study of Tasmanian Aborigines. The projects were not exclusively scientific, and included research into constitutional law, philosophy and history.

Join Dr James Waghorne, University Historian from the University of Melbourne, to examine the emergence of research as an important university ideal. What compelled our governments to fund research, and what it was able to achieve? Dr Waghorne will assess the value of the program and its enduring significance.



Book online now at <http://ow.ly/4n69Wh>, call or email the RSV office to secure your place: 9663 5259, rsv@sciencevictoria.org.au. If you plan to join us for refreshments prior to our lecture from 6.15pm, please register your attendance so we can anticipate catering requirements. **All most welcome.**

MAY FIELD TRIP



An **RSV member-only** tour will be conducted on **13th May, 2016**

THE PETER DOHERTY INSTITUTE FOR INFECTION & IMMUNITY

The Royal Society of Victoria will convene its third field trip for the year with a visit to the remarkable Peter Doherty Institute for Infection & Immunity.

Located in the heart of the Parkville Biomedical Precinct, the Doherty Institute brings together the expertise of leading biomedical scientists, public health specialists and educators focused on infectious diseases and immunity. A partnership of Melbourne Health and the University of Melbourne, the Institute integrates teaching, training, research and public health activities.

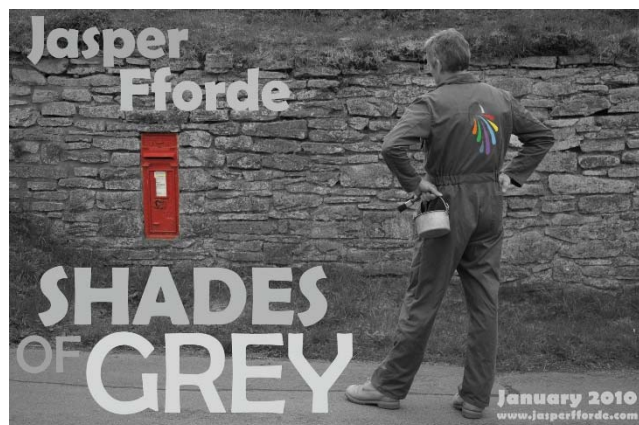
The only facility of its kind in the southern hemisphere, the scheme allows space to be reconfigured and encourages the seven different organisations it houses to work closely together.

An exciting opportunity to tour a state of the art facility and meet its eminent namesake, **Laureate Professor Peter Doherty AC**.



Register online now at <http://ow.ly/4n6cl5>, or contact the RSV office to secure your place: 9663 5259, rsv@sciencevictoria.org.au. No cost to RSV members, but **numbers are strictly limited. Please act fast!**

The Big Ideas Book Club



“Shades of Grey” by Jasper Fforde

The Blurb: “Welcome to Chromatacia, where the societal hierarchy is strictly regulated by one's limited color perception. And Eddie Russet wants to move up. But his plans to leverage his better-than-average red perception and marry into a powerful family are quickly upended. Juggling inviolable rules, sneaky Yellows, and a risky friendship with an intriguing Grey named Jane who shows Eddie that the apparent peace of his world is as much an illusion as colour itself, Eddie finds he must reckon with the cruel regime behind this gaily painted façade.”

The Big Ideas Book Club **alternates science non-fiction and fiction titles every month**, so there's something for everyone. Purchasing each month's book from [Embiggen Books](http://www.embiggenbooks.com) entitles participants to a 10% voucher for any other paperback in store when attending the Book Club. This is a free club – just read the book and come along!

Where: **Embiggen Books**, 197-203 Lt Lonsdale Street (may upgrade to the larger Royal Society of Victoria venue, depending on numbers)

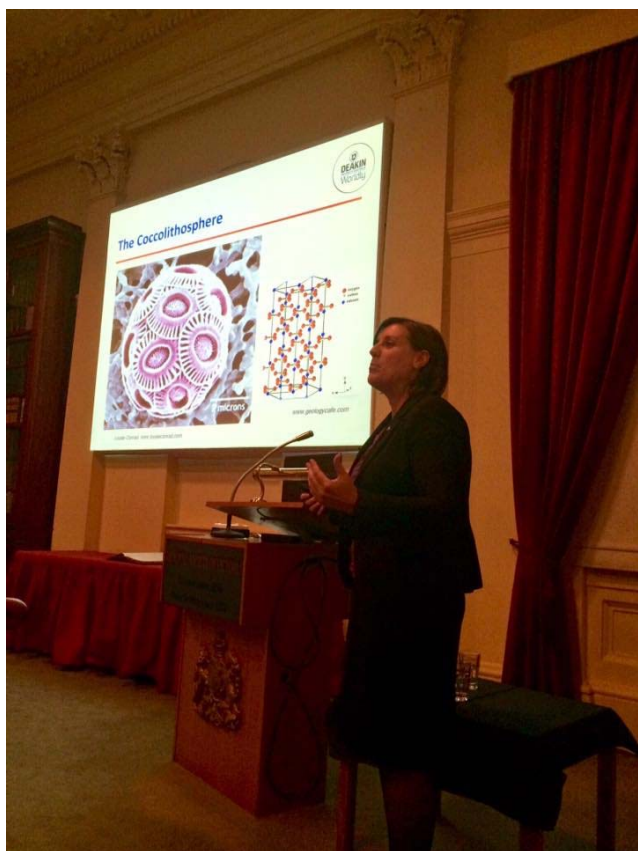
When: **Wednesday, 25 May, 2016 @ 6:30pm**

Bookings: Embiggen Books, 9662 2062 or events@embiggenbooks.com. You can also register to attend online at <http://www.meetup.com/Big-Ideas-Book-Club/events/230065475/>.

From the President



The month of April just gone (or nearly so) is always a busy one for the Society, with the Annual Report to be finalised and the Annual General Meeting to be held, not to mention preparation of the May newsletter. It always seems oddly out of phase to be having our AGM four months into the calendar year, when our 2016 programme is in full swing. Already we've been treated to the highly successful Eucalypt symposium, some stimulating bimonthly lectures, and visits to two interesting destinations in our new series of field trips.



Tiffany Walsh, Professor of Bio/Nanotechnology at Deakin University's Institute for Frontier Materials, amazed us with the potential for manufacturing materials with remarkable properties using peptide chains and other nano-scale processes found in nature. A terrific April lecture!

Speaking of the Annual Report, I'm sure all members will agree that it is a high-class production, thanks to Mike Flattley's creativity and with extensive input from the Society's office-bearers and committee chairs. Our external accountant, Linda Baird, has worked diligently to reformat and expand the financial statements to include more clarifying notes. It's a pity that the outcome for the year 2015 was not more beneficial for the Society, but with the staffing now settled, some expenditure items out of the way, and an encouraging lift in rental income so

far this year, we are aiming for a better outcome in 2016.

The five new Council members take up their positions as from the AGM, and I take this opportunity to wish them well and hope they enjoy the experience. They all sat in as observers at the April meeting of Council, which, as might be expected, dealt with an extensive agenda. I also wish to thank the retiring council member Dr Tim Entwisle for his contributions during his two-year term.

RSV Young Scientist Research Prizes 2016

Please be advised that the window for submissions for the 2016 Young Scientist Research Prizes, open to **postgraduate doctoral students in third or fourth year of their candidacy at a Victorian research institution** in all areas of the Biomedical & Health Sciences, Biological Sciences (Non-human), Earth Sciences and Physical Sciences, has been extended to allow time for more submissions.

Applications will now close at 5.00pm on Monday, 16 May 2016. Candidates should nominate themselves. Please bring these prizes to the attention of the talented emerging scientists in your network.

Full details are available from our website at <http://www.royalsocietyvictoria.org.au/awards-and-prizes/young-scientist-research-prizes/>

April Field Trip to RMIT's Advanced Manufacturing Precinct



The "makerbot" bench, where students experiment with 3D printing materials from digital designs for a range of functional and creative applications. Students are drawn from diverse disciplines, from aerospace engineering to medical prostheses, from architecture to fashion, to explore the potential of new manufacturing technologies.

On 20 April, RSV members were given the Royal treatment at RMIT University's Advanced Manufacturing Precinct, established to inject new life into Victoria's manufacturing sector through training students in next-generation processes, materials and applications.



Teaching spaces adjacent to production line assemblies, new generation equipment and "maker spaces" blend theory with practice for RMIT students

Moving on from a mind-bending introduction to new, ultra-precise, highly customisable production technologies, we were introduced to a range of exciting applications from aerospace engineering, to customised, "patient-specific" replacement body parts, to creative arts and design.



Darpan Shidid with a biocompatible, 3D printed, titanium lattice bone implant that matches the rigidity gradient of surrounding bone (mitigating development of fragility) and encourages new bone growth to colonise through its structure.

A wonderful "maker space" to play with and learn in! Thanks to **Professor Milan Brandt**, **Maciej Mazur** and **Darpan Shidid** for making us all so welcome.



RSV members with facility chief, Professor Milan Brandt.

RSV Medal for Excellence in Scientific Research



2015 RSV Research Medal winner Professor David Karoly (right) with RSV President Dr William Birch AM and Her Excellency the Hon Linda Dessau AM, Governor of Victoria

Submissions opened for the 2016 RSV Medal on **31st March**. This year, nominations are invited for Category IV: Physical Sciences, which includes research in the disciplines of Astronomy, Astrophysics, Chemistry, Engineering, Mathematics, Physics and related sciences.

Award criteria are based on demonstration of the candidate's excellence and leadership in scientific research. The work shall have been carried out in Australia, or about Australia, with preference for work conducted in Victoria, or about Victoria.

Members and friends are strongly encouraged to consider the high achievers in their networks and submit nominations. **Submissions close at 5pm on 31 August, 2016.** Full details are available online:

<http://www.royalsocietyvictoria.org.au/awards-and-prizes/research-medal/> .

Nominations for RSV Membership

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

Emeritus Professor **Marcus Ramsay WIGAN**, polymath, musicology student
 Mr **Xavier Adam HALL**, PhD Student
 Mr **Hamish Galloway BROWN**, YSRP Applicant
 Ms **Renée Louise WEBSTER**, YSRP Applicant
 Mr **Lincoln Mark TRACY**, YSRP Applicant
 Ms **Sarah Elizabeth ASHLEY**, YSRP Applicant

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 9th June.

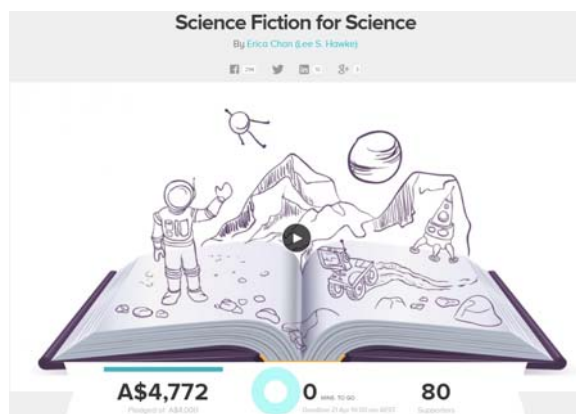
Recently elected members who have not yet signed the Society's membership book are invited to attend the 12th May meeting to be formally welcomed as members. Please inform the office if you plan to attend.

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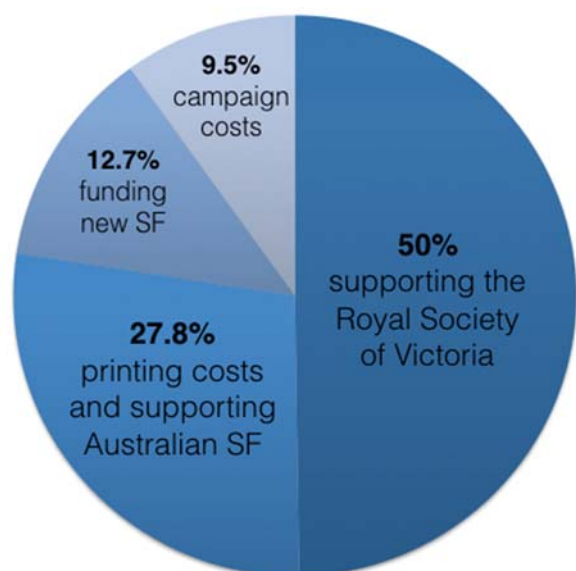
Crowdfunding Creativity

Fundraising Campaign: Science Fiction for Science

Our grateful thanks to all members and friends who supported our fundraiser last month. Thanks to 80 generous supporters, our partnership with talented author Erica Chan (Lee S. Hawke) exceeded the target, returning a total of **\$4,772**.



As earlier advised, 50% of proceeds will be directed towards our science education and outreach programs, with the balance of funds raised supporting Erica's impressive writing and publishing efforts.



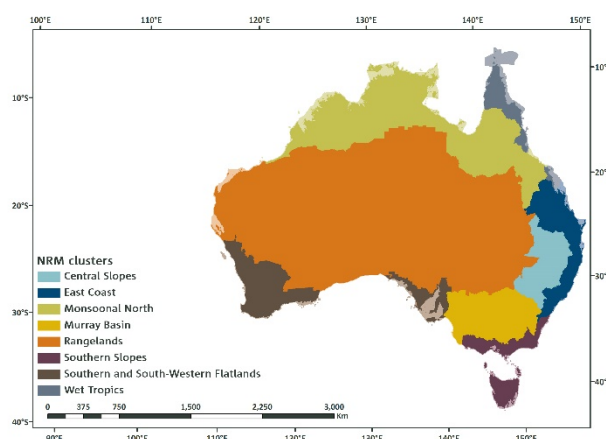
With our Outreach & Partnerships Committee working on some very purposeful science

education support with underprivileged Victorian schools, plus the onset of our awards season for emerging Victorian scientists, these funds will soon be put to worthwhile use.

We will be working with Erica over the coming week to ensure all 80 supporters are sent their various 'reward packages.' Thanks again to all who pledged their support, and happy reading!

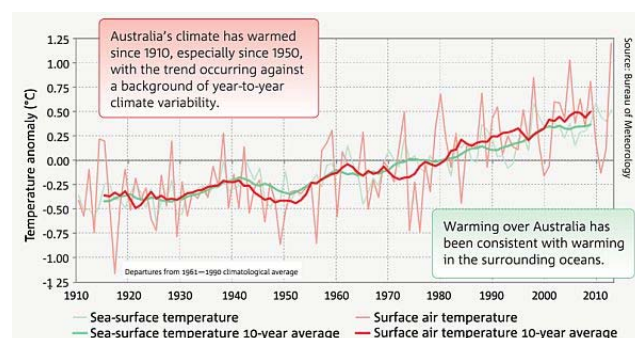
Mike Flattley

RSV Policy & Communications Committee: Climate Change Position Statement



"Natural Resource Management Clusters" analysed in CSIRO's 2015 release of "Climate Change in Australia"
<http://www.climatechangeinaustralia.gov.au/en/>

The Royal Society of Victoria's Policy & Communications Committee, chaired by Dr Peter Baines, have prepared an official policy statement on climate change.



Australia's climate has warmed since 1910, especially since 1950, with the trend occurring against a background of year-to-year climate variability.

The proposed Policy Statement is available online from <http://ow.ly/4n6fjW>. In line with a new procedure, the proposed Policy Statement will be online for a period of six weeks for review. **Feedback is invited from RSV members** for further consideration by the Committee ahead of formal adoption, and may be provided via the RSV office at rsv@sciencevictoria.org.au until the close of business on Friday, 10th June.



The Royal Society of Victoria

Ordinary Meetings & Lecture Schedule, 2016

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/>

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| 11 th February – | Professor Gary Egan, “Imaging the Living Brain in Health & Disease: MRI & PET Scanning” |
| 25 th February – | Dr Marissa Parrott, “Threatened Species: Fighting Extinction” |
| 10 th March – | Professor Sharon Lewin, “From the Beginning to the End of HIV: the Great Successes & Remaining Challenges” |
| 24th March - | No lecture (Easter Break) |
| 14 th April – | Professor Tiffany Walsh, “How does Nature do it? Unlocking High-Performance Natural Composites with Computers to Inspire New Materials” |
| 28th April – | Annual General Meeting |
| 12 th May – | Professor Matthew King, “Continental Loss: the Quest to Determine Antarctica’s Contribution to Sea-Level Rise” |
| 26 th May – | Dr James Waghorne, “Science in the State’s Interest: the Victorian Precursors to CSIRO” (Joint RHSV Lecture) |
| 9 th June – | Professor David Vaux, “Researchers Behaving Badly: Misconduct in Science” |
| 23 rd June – | Dr Erin Matchan, “The Victorian Age of Volcanoes” (A W Howitt Lecture) |
| 14 th July – | Dr Maria Forsyth, “Energy Storage for a Sustainable Environment” (Joint ATSE Lecture) |
| 28 th July – | Emeritus Professor Ian Polmear, Professor Max Lay, “Ripping Yarns: Tales from the Research Trenches” (lunchtime lecture) |
| 11th August – | 2016 Young Scientist Research Prizes (National Science Week) |
| 25 th August – | Dr Linzi Wilson-Wilde, Issues in Forensic Science |
| 8 th September – | Professor Jonathan Stone, “Alzheimer’s Disease: Is the Brain Destroyed by the Pulse?” |
| 22 nd September – | Panel & Debate, “Future Melbourne: Population, Health, Resources & Infrastructure” |
| 13 th October – | Professor Elisabetta Barberio, “The Hunt for Dark Matter: Stawell’s Underground Physics Lab” |
| 27th October – | Phillip Law Postdoctoral Award for the Physical Sciences & Lecture |
| 10th November – | Science Communication Graduate Prize & Lecture |
| 24th November – | Very Young Scientists (Science Talent Search Bursary Recipients) |
| 8th December – | RSV Research Medal Lecture & President’s Soiree |