

PATRON: The Hon Linda Dessau AC Governor of Victoria

PRESIDENT: Mr David Zerman

2019 Annual Report



THE ROYAL SOCIETY OF VICTORIA INCORPORATED

ABN 62 145 872 663
ANNUAL REPORT FOR THE
YEAR ENDING 31st DECEMBER 2019

Council has the honour to present its report to Members upon the activities of the Society during its 165th year of operation.

PATRON

The Hon Linda Dessau AC

Governor of Victoria

COUNCIL

OFFICE BEARERS

President Mr D. Zerman, MPH, FFIA, CFRM, FAIM Vice-President Mrs N. H. Williams, BSc, DipEd, MSc, FRACI

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Dr P. G. Baines BA (Hons), BSc, PhD

Honorary Treasurer

Mr A. Davison, BSc, BComp (Hons)

MEMBERS

Dr S. Frentz, BSc (Hons), PhD

Dr V. Perunicic, BSc (Hons), MSc, PhD

A/Prof. R. Day, BSc (Hons), PhD

A/Prof. G. Smith, BPS, GradDip, MEH, PhD

Dr K. Orrman-Rossiter, BAppPhys, MAppSci, PostgradDip, PhD

Dr C. de Burgh-Day, BSc, MSc, PhD

Ms P. Borger, BSc (Hons), DipEd, MEd

Mr R. Gell AM, BEng

Prof. D. Walker, BSc, PhD, DSc

Dr J. Boyce, MGeosci (Hons1), PhD

RETURNING OFFICER

Em. Prof. J. W. Warren, MA, PhD

Dr. D. A. McCann, DipAppChem, DipEd, GradDipLib, MEnvSc, PhD (Deputy)

CHIEF EXECUTIVE OFFICER

Mr M. Flattley, BA, GradCert, GradCertDes

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Dr A. S. Finkel AO, PhD, FAA, FTSE

Prof. L. Selwood AO, MSc, PhD

Em. Prof. J. W. Warren, MA, PhD

Cover: NASA Scientist **Dr Darlene Lim** presenting in Victoria's Legislative Council Chamber on 10th August, 2019 as a part of Extrasensory, the Society's major event at Parliament House for National Science Week

FELLOWS OF THE ROYAL SOCIETY OF VICTORIA

David H. Ashton*	2001	Yvonne Aitken*
Herbert H. Bolotin		Martin R. Harris
Phillip G. Law*		Barry O. Jones
Dewar W. Goode*		John F. Lovering
Jerry M. Adams	2004	Thomas A. Darragh
Clive K. Coogan*		Joyce R. Richardson*
Suzanne Cory	2005	Hilary J. Harrington*
Sir Gustav Nossal		Murray J. Littlejohn
Sir Arvi Parbo*	2008	David V. Boger
Graeme I. Pearman	2010	Milton T. W. Hearn
John A. Talent	2016	Peter C. Doherty
James M. Bowler	2018	Lynne Selwood
Nancy F. Millis*	2019	Sandra Rees
	Herbert H. Bolotin Phillip G. Law* Dewar W. Goode* Jerry M. Adams Clive K. Coogan* Suzanne Cory Sir Gustav Nossal Sir Arvi Parbo* Graeme I. Pearman John A. Talent James M. Bowler	Herbert H. Bolotin Phillip G. Law* Dewar W. Goode* Jerry M. Adams Clive K. Coogan* Suzanne Cory Sir Gustav Nossal Sir Arvi Parbo* Graeme I. Pearman John A. Talent James M. Bowler 2018

^{*} Deceased



PRESIDENT'S REPORT

Mr D Zerman

As I write in this report in late April 2020 about RSV activities in 2019, it seems so long ago as we live in the first four months of COVID-19.

The 2019 Annual General Meeting will be unique in the 166-year history of the RSV and your involvement will record you as a participant at this historic event, as the AGM will be conducted electronically rather than in person.

But as we continue to conduct our (adapted) activities in 2020, I reflect on what I think was an exceptional program for our Members during 2019. Details on our presentations and other activities during 2019 are outlined throughout this report.

I'd just like to draw a few matters to your attention. Besides the variety of presentations in our lecture series, one of the highlights for me was the 400-plus activities across Victoria during National Science Week. Within that week, I was overwhelmed by the exceptional range of more than 30 events during a Saturday night at Victoria's Parliament House, attended by more than 1000 people.

Our activities are a team effort. Besides the Executive and Council of the RSV (listed on page 2 of this report) who have legal oversight of our activities, the hard work of bringing our plans to reality is undertaken by the RSV staff led by our CEO Mike Flattley, and the professional team comprising James McArthur, Malourie Crawford, Renee Beale, Fleur Kallenbach, Ann Woelk, Catriona Nguyen-Robertson and Linda Baird. I would like to especially thank Sam Smale, Nikki Wood, Cassandra Ferry, Doug McCann and Luca Bizzarri, who are the stars of our hospitality team.

Our Patron, the Governor of Victoria, Linda Dessau AC, has been a great supporter of our activities and hosted a public science forum organised by the RSV on 11 September at Government House, attended by more than 500 people.



Some members of the RSV Hospitality Team, from left: Cassandra Ferry, Samuel Smales, Malourie Crawford (RSV Events & Functions Manager) and Nikki Wood.

Your involvement with and support of the RSV in 2019 ensured that we continued the mission of our founders - to promote science to the Victorian community.

I thank you for your participation and look forward to meeting and speaking to you at our historic, virtual AGM.

FUNDRAISING 2019

The Society gratefully acknowledges the following Members for their generosity (post-nominals omitted):

Mr Greg Eccleston Dr Murray Johns **Professor Sandra Rees** Mr John Link Dr Murray Littlejohn Mr Mike Flattley Dr Rob Day Mr Charles Clark Agriculture Victoria **Prof Bruce Kemp** Dr Ken Bell Mr David Zerman Dr Alan Finkel Mr Graeme Weber Mr John Neil Mr Warwick Anderson Mrs Voi Williams Ms Che Celledon Mr Keith Dempster Ms Elizabeth Connor **Dr Peter Baines** Dr Suzanne Daniel-Dreyfus Ms Nancy McNeill Ms Nola Miles Dr Colleen Morris Mr Alan Davis Dr Bram Mason Mr Ian Jones Mrs Lynn Treadwell Loyola College Mr John Neil Mr Alan Evered Dr Max and Mrs Margaret Mr Roy Hardcastle Dr Melinda Kemp Richards Ms Kerrie McNicol Mr James McConville Mr Peter Holbeach

Mr Norm West

Ms Kerrie McNicol

Ms Carol Ely

Lady Primrose Potter

Mr John Neil

Mr Richard Lodder

Funds raised from members and supporters in 2019 totalled **\$20,113.10**. Of this, most were directed to the Society's highest priorities, with \$290 directed to RSV-supported **Indigenous Australian STEM literacy** initiatives and \$5,000 directed to support our **Young Scientist Research Prizes**.

A further \$2,300 was raised through thoughtful contributions by the general public during the Melbourne Garden and Flower Show, which was directed to our Young Scientist Research Prizes. A further \$1,077 was raised in support of our auspicee Science for All (operating the Campfires and Science and Wild DNA programs) and a further \$1640.31 was raised for our highest priorities through donations collected via Eventbrite.

Total funding received through donations, fundraising and bequests totalled **\$25,130.41**. Thanks to all for generously supporting our endeavours.

THE HALL & GROUNDS

Numerous organisations conducted over 240 meetings during the year. **Eucalypt Australia** continued their lease of the Nancy Millis Room. **GoGet Carshare** continued leasing spaces in the Hall's car park, with **Flexicar** also sustaining a lease. The **Environmental Protection Authority Victoria** continued their lease on the former Bureau of Meteorology site to undertake air pollution monitoring activities. Science communication agency **Scientell** extended their tenancy, growing their team and moving into the larger upstairs office.

	2013	2014	2015	2016	2017	2018	2019
Number of Meetings			362	353	358	370	243
Revenue from Tenancies & Venue Hire	\$158,918.00	\$184,571.00	\$164,546.00	\$189,147.00	\$190,388.00	\$211,725.00	\$249,301.00
Revenue from RSV Events	\$	\$	\$	\$39,358.00	\$14,720.00	\$21,068.00	\$33,876.00
Total Venue & Events Revenue	\$158,918.00	\$184,571.00	\$164,546.00	\$228,505.00	\$205,108.00	\$232,793.00	\$283,177.00

Revenues from the RSV's tenancies, venue hire and events operations were very healthy at \$283,177.

ACKNOWLEDGEMENTS

The Society's thanks and appreciation are due to those people and organisations that contributed their valuable assistance during the year, notably:

♦ The many RSV Members assisting with management of our Library collection, distributing the monthly Newsletter and assisting with the dispatch of materials to event holders during National Science Week.

Dr William Birch

CITY OF MELBOURNE

The Council wishes to acknowledge with gratitude the continued maintenance of the publicly accessible grounds of the Society as part of the City of Melbourne's open space program.

ADMINISTRATION

Mr Mike Flattley, Chief Executive Officer

Mr James McArthur, Business and Facilities Manager

Ms Malourie Crawford, Events Manager

Dr Renee Beale, Victorian Science Week Lead

Ms Ann Woelk, Community Engagement & Partnerships Officer

Ms Fleur Kellenbach, Governance & Philanthropy Officer

Ms Catriona Nguyen-Robertson, Science Communications Officer

This Report is approved by Council for presentation to Members at the Annual General Meeting to be conducted Thursday 14th May, 2020.

David Zerman, President

2018 ANNUAL GENERAL MEETING

The 162nd Annual General Meeting was convened on 9th May, 2019.

Councillors A/Professor Robert Day, Ms Pamela Borger, Professor David Walker, Dr Viktor Perunicic and Mr Robert Gell AM were inducted for a two-year term as Ordinary Members of Council at the AGM.

The Annual Report and Financial Statements for 2018 were received and adopted. Proposed amendments to the Society's Rules were carried subject to amendments. Amendments to the Society's By-Laws were noted.

FELLOWS

Professor Sandra Rees was inducted as a Fellow of the Royal Society of Victoria at the Annual General Meeting held on 9th May.

RESEARCH MEDAL

Mr D. Zerman (Chair), Mrs N. Williams, Dr W. Birch, Dr P. Baines, Mr A. Davison

Following the input from of an independent panel of assessors on submissions received, the Executive Committee was pleased to recommend to Council that **Professor Andrew Pitman** be awarded the Royal Society of Victoria's Medal for Excellence in Scientific Research in **Category III: Earth Sciences**. In the Medal's 60th year, the presentation to Professor Pitman was made by Victoria's Commissioner for Environmental Sustainability, Dr Gillian Sparkes MRSV. Our Medallist then presented his work to the Society in a lecture titled "Climate Extremes: Present and Future."

David Zerman, Chair



Professor Andrew Pitman was awarded the 2019 Medal for Excellence in Scientific Research by Victoria's Commissioner for Environmental Sustainability, Dr Gillian Sparkes.



FROM THE CEO Mr M. Flattley

I would like to thank all members, staff, partners and supporters of the Royal Society of Victoria for embracing our vision for a state engaged with the excitement and opportunities of scientific work beyond the traditional boundaries of schools, research institutions and specialised industry. 2019 has been a high water mark for the RSV in terms of its impact, from the grass roots of public libraries to the halls of both Parliament and Government House, and

I sincerely hope our efforts have demonstrated to people from all backgrounds the value of an institution that brokers meaningful connections between scientists, communities, governments and industries through our shared challenge: building the personal and collective capacities of Victorians to face an increasingly uncertain future. Through access to the expertise of our scientific community, an understanding of the scientific process and a willingness to embrace evidence-based decision making, we aim to bring science to life for people everywhere, embracing the diversity of the human experience.

Crucial to the Society's continuing role is our own sustainability as an organisation. The first consideration of any organisation's sustainability is the question of its relevance — is the promotion of science to community and government an endeavour that is needed and valued by our broader society? While we, as an organisation defined by the character of our

membership, are convinced that scientific work and universal scientific literacy are essential to the future wellbeing of our state and people, the true indication comes when we put that assertion to the test with a broader society.

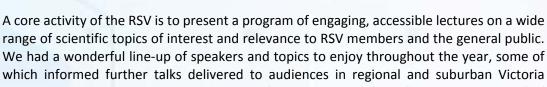
We have been small in our ambitions and scope of activities for a very long time, and our recent investment in becoming an NGO that truly takes the whole of Victoria into scope when delivering on our mission has underscored the very low financial base from which we operate. This has for too long constrained our efficacy, threatening to overwhelm our core mission with the perpetual concerns of maintaining heritage buildings and facilities, drawing on the finite revenues we raise through member subscriptions, tenancies, facility hire and functions.

The Society's finances will be discussed in the Treasurer's report but suffice to say a sombre outlook has precipitated a search for definitive, transformational solutions. We know that we cannot continue to operate from a financial base lower in value than a single, average house in suburban Melbourne; an operation of our scale and ambition requires a substantial endowment to remain viable and effective. We have thought hard over a long interval, both at the leadership level and through

convening the expertise of our members through themed workshops, and it is clear we have a number of very challenging, yet achievable, measures to take in the years ahead. Certainly, the 1 Victoria Street proposal is our great aim for a "super-charged" Society, but it is also my hope that we can look to the generosity of individual donors and philanthropic trusts, and the partnership of sponsors and grant makers, to help us realise our ambitions for Victoria's future. Please support us on that journey.

Mike Flattley, CEO





through the Inspiring Victoria program. The majority of these are termed the "Ordinary Meetings" of the RSV's members, with many others convened as special events, often in partnership with or the support of other organisations and groups.



2019 "Ordinary Meetings" of the Royal Society of Victoria

14 February: Rain, Hail or Shine: The Secrets of Severe Weather



Dr Joshua Soderholm, School of Earth, Atmosphere and **Environment, Monash University**



28 February:

Fashionable Science: Wearables, Functional Textiles and Circular Fashion





14 March:

The Future of Electronics: Beyond the End of Moore's



Associate Professor Meera Parish, Dr Carlos Kuhn and Ms Rebecca Orrell-Trigg from the ARC Centre of Excellence in Low-Energy Electronics.



28 March:

The Marvels of Medicinal Plants



Dr Tien Huynh, Biosciences & Food Technology, RMIT University.



11 April: Moneyball 2.0: Analytics and Technologies Improving **High-Performance Sports**

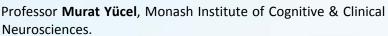


Associate Professor Sam Robertson and Professor Damian Farrow, Victoria University.



9 May:

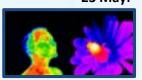
Gamble, Drink, Consume, Repeat: Why we need **BrainPark**





23 May:

Are Bees Smart Pollinators? You can Count



Associate Professor Adrian Dyer, Design and Social Context, RMIT University.



13 June: Edible Nature Strips and **Subsidised Worm Farms** Ms Liza Barbour, Monash





University.



27 June:

From Monsoons to Desert: 50 Million Years of **Australian Climate History**





25 July:



Collaborative Social Work: **Human-Robot Interaction** Professor Elizabeth Croft, Dean of Engineering, Monash University.









Mind over Faecal Matter: Gut biome and mental health Professor Ashley Franks, La Trobe School of Life Sciences and Associate Professor Elisa Hill-Yardin, RMIT University



15 August:



Young Scientist Research Prizes: 2019 Competition and Prize Ceremony Dr Rachel Brand (Swinburne University), Ms Avanthi Isaka Badulla Liyanage (Monash University), Miss Shruti Nirantar (RMIT University), Ms Elvina Parlindungan (RMIT University), Ms Annie Cox (Monash University), Ms Emily **Roycroft** (University of Melbourne)

12 September:



Darkness Visible Down Under

Professor Alan Duffy, Swinburne Centre for Astrophysics and Computing, Swinburne University



26 September:



Pyrodiversity: Fire and Wildlife in the **Anthropocene**

Dr Luke Kelly, School of Ecosystem and Forest Sciences, The University of Melbourne



10 October:



What are Fungi Doing for our **Bushlands?**

Dr Sapphire McMullan-Fisher, Mycologist, Fungi for Land





24 October: Nanoparticles: **Exploiting Colour and Light** Dr Rajesh



Ramanathan, Senior Lecturer, School of Science, **RMIT**

University

(Phillip Law Postdoctoral Award Lecture)





14 November: Art and Life in Earth's **Chemical Reactor**

Professor Uta Wille, School of Chemistry, University of Melbourne and Dr Caroline Kyi, Conservator and Conservation Scientist







12 December:



Climate Extremes: Present and Future Professor Andrew Pitman, Director, ARC Centre of Excellence for Climate Extremes



Joint Presentations & Panel Sessions



From left: RSV Treasurer Andrew Davison with Professor Elizabeth Croft and ATSE Victorian Chair Dr Alexander Gosling AM.

Fascinating joint lectures included our enduring collaboration with the **Australian Academy of Technology and Engineering**, this year hearing from the Dean of Monash Engineering, Professor **Elizabeth Croft** and her fascinating work in "Collaborative Human-Robot Interaction;" and the annual **Howitt Lecture** with the **Geological Society of Australia Inc (Victoria Division)** featured the work of Associate Professor **Stephen Gallager** (Melbourne School of Earth Sciences) on "50 Million Years of Australian Climate History."

Two fascinating panel sessions were convened this year: one on "Fashionable Science: Wearables, Functional Textiles and Circular Fashion," featuring Dr Nolene Byrne from Deakin University's Institute for Frontier Materials, Dr Rajesh

Ramanathan from RMIT University's School of Science, Dr Lyndon Arnold formerly of CSIRO and RMIT, and independent designer Dr Leah Heiss; and another on "The Future of Electronics: Beyond the End of Moore's Law" with Associate Professor Meera Parish (Monash University), Dr Carlos Kuhn (Swinburne University), Ms Rebecca Orrell-Trigg (UNSW) and Dr Errol Hunt (Monash), all colleagues from the ARC Centre of Excellence in Low-Energy Electronics Technologies.



Science Fashionistas, from left: Dr Leah Heiss, RSV Science Week Lead Dr Renee Beale, Dr Rajexh Ramanathan, RSV Vice-President Mrs Nicola Williams, Dr Nolene Byrne, Dr Lyndon Arnold and RSV Science Program Chair Dr Kevin Orrman-Rossiter.

2019 Boden Conference: Evolutionary Transformations in Vertebrate History



From 2 to 4 October, the RSV partnered with Museums Victoria and the University of Melbourne to present the Australian Academy of Science's **2019 Boden Conference**, convened by dynamic RSV member Dr **Christy Hipsley** (pictured left), Chief Investigator of the Hipsley Lab at the University of Melbourne and Museums Victoria. The conference brought together top Australian and international scientists, students and early-career researchers to present the latest advancements in investigating the dynamics of evolutional transitions, such as the colonisation of land by tetrapods, the secondary invasion of water by whales, the feathered flight of dinosaurs, and live mammalian birth, with an emphasis on

methods for integrating modern and palaeontological data. Keynote speakers included Professor Michael

Coates and Assistant Professor Graham Slater from the University of Chicago, Dr Daniel Thomas from Massey University, Dr Emma Sherratt from the University of Adelaide, Professor Anjali Goswami from University College London and Dr Helene Morlon from CNRS in France. Our 2011 RSV Research Medallist and erstwhile President of the Royal Society of South Australia, eminent palaeontologist Professor John Long, provided the keynote at the conference dinner held at the Society's premises on the evening of 4 October.



The Young Scientist Research Prizes

Our annual YSRP competition was held on 15th August as part of **National Science Week** in 2019. Open to students in the final year of their PhD candidature, in 2019 there were 60 entries across three categories: Biological Sciences (non-human); Physical Sciences and Biomedical & Health sciences. There were no eligible entries in the Earth Sciences category.

We are most grateful to our colleagues with requisite disciplinary expertise who acted as assessors for the short list and joined the judging panel on the night of the final. Thanks go to Nicola Williams, Robert Day, David Walker, David Zerman, Bill Birch, Angela Cumberland, Bobbi Fleiss, Sophia Frentz, Catherine de Burgh-

Day and Viktor Perunicic for assisting us with this challenging work.

Two finalists from each category presented 10-minute talks to an enthusiastic audience of family, peers, supervisors and RSV members. The first prize winners were each presented with two years' membership of the RSV, a cheque (\$1,000) and a prize certificate by our President, Mr David Zerman.



Biological Sciences (non-human):

First Place: Emily Roycroft

School of BioSciences, The University of Melbourne

& Museums Victoria

"Phylogenomics, adaptation and extinction in the

evolution of native rodents."



Second Place: **Elvina Parlindungan** School of Science, RMIT University

"Developing new antimicrobial compounds from bacteria to improve food safety and reduce food waste."



Physical Sciences:

First Place: **Avanthi Isaka Badulla Liyanage**Department of Civil Engineering, Monash University

"Application of supercritical carbon dioxide in enhanced geothermal systems."

Emily Roycroft.

YSRP Finalists, from left: Dr Rachel Brand, Ms

Avanthi Isaka Badulla Liyanage, Miss Shruti

Nirantar, Ms Elvina Parlindungan, Ms Annie Cox, Ms



Second Place: Shruti Nirantar

School of Engineering, RMIT University

"Electronics beyond silicon: Switchable nanoelectronic devices."



Biomedical and Health Sciences:

First Place: Annie Cox

The Ritchie Centre, Department of Obstetrics and Gynaecology, Monash

University

"Protecting women with preeclampsia and their babies: Could sulforaphane, a broccoli sprout extract, be the answer?"



Second Place: Rachel Brand

Centre for Mental Health, Swinburne University of Technology

"Trauma, post-traumatic stress symptoms and voice-hearing: An exploration of causal mechanisms and potential treatment approaches."

Our second prize winners each received a cheque (\$500), a prize certificate and a year's membership of the Society. Our thanks once again to the Committee members, assessors and judges for their support and input, and the CEO and staff for their considerable work in administering the Awards and bringing our lecture program to fruition.

The Phillip Law Postdoctoral Award for the Physical Sciences

The award (\$3000), for postdoctoral candidates within the first seven years of the conferring of their PhD, is made possible by the generous bequest of Dr Phillip Garth Law, a former President of the Society and Director of the Australian Antarctic Division. Ten eligible candidates were judged by a panel convened by Dr Kevin Orrman-Rossiter, further comprising Mrs Nicola Williams, Dr Catherine de Burgh-Day and Dr Viktor Perunicic, to whom we are most grateful. 2019's winner was Dr Rajesh Ramanathan (Senior Research Fellow, RMIT University), who delivered a fascinating talk titled "Exploiting Colour and Light."

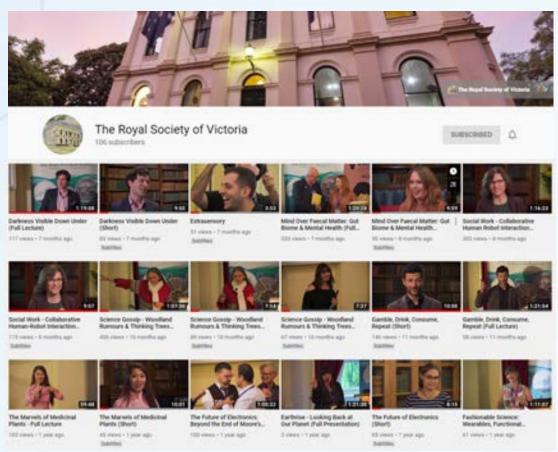


RSV President David Zerman (left) presents the Phillip Law Postdoctoral Award to Dr Rajesh Ramanathan.

Outcomes:

Lecture attendances throughout the year were fair to outstanding, ranging from 46 to 132 (an over-full house), with an average audience registration of 87; 6 of our 18 ordinary meetings were at full capacity.

All presentations were livestreamed and inform an archive on our Facebook page and web site. Select videos were filmed professionally and inform the archive at the Society's YouTube channel, also featured on our web site and social media channels.



We thank all our speakers for the time and effort that they put into their presentations in 2019 and the opportunity that it affords us to stay informed of the research being undertaken in Australia and around the world. Through filming our presentations via livestream and in high quality for select lectures we bring a far greater audience engagement with our speakers, and also aim to augment the reputation of Victoria's outstanding scientists and the public profile of their work – we are always delighted to hear of our speakers going from strength to strength following their talks at and awards from the Society.

My particular thanks go to Dr **Renee Beale** MRSV for her work in programming the 2019 calendar of subjects and speakers.

- Dr Kevin Orrman-Rossiter, Chair

2019 Special Events

Supplemental lectures, cultural events and partner presentations

11 February:

International Day of Women & Girls in Science: Schools Event



In partnership with Environmental Protection Authority Victoria, the RSV hosted a special celebration with Dr **Angie Bone** (Victoria's Deputy Chief Health Officer), Dr **Andrea Hinwood** (Victoria's Chief Environmental Scientist), Dr **Amanda Caples** (Victoria's Lead Scientist), and Dr **Gillian Sparkes** (Victoria's Commissioner for Environmental Sustainability). An interactive, web-streamed panel session facilitated by Dr **Bridie O'Donnell** (Head, Office for Women in Sport and Recreation) was delivered to schools across Victoria from the RSV's headquarters, along with a keynote from Dr **Marguerite Evans-Galea** (CEO, Women in STEMM Australia).







13 March:

Origins: How the Earth Made Us



Astrobiologist Professor **Lewis Dartnell** joined us from the University of Westminster to explore insights to the Earth's impact on the shape and nature of human civilisations.

3 April: Ockham's Razor: LIVE from the Royal Society of Victoria



An **ABC Science** live recording event featuring science journalist and broadcaster **Natasha Mitchell** (MC), Professor **Jon McCormack** from Monash University, Dr **Kiri Beilby** from Monash University, Dr **Jenny Gray** from Zoos Victoria, Dr **Ken**

Walker from Museums Victoria and Professor **Andrew Pask** from the University of Melbourne. These six, ten-minute presentations were subsequently published as a podcast with ABC Online and broadcast through ABC Radio National.





The Society hosted the Melbourne event for the global March for Science movement, which featured a discussion facilitated by RSV CEO Mike Flattley, with panellists Dr Amy Edwards (La Trobe University), Dr Anita Goh (University of Melbourne), Dr Kudzai Kanhutu (University of Melbourne) and Mr Simon Pampena (Discovery International). Presentations and discussions were concerned with improving our advocacy of scientific expertise, evidence-based decision making and STEM enterprises for the public good in light of

contemporary socio-political events. Thanks to RSV members **Paul Leopardi** and **Kate Ferris** for their efforts in convening the event, along with a host of colleagues from our vibrant science community.







5 May: For the Love of Science



A **Science Nation** event, putting scientists and their partners to the test to see how many actual facts are successfully transmitted from spouse to spouse! Featuring Dr **Yang Choon Lim**, Associate Dr **Matthew Marino**, Dr **Pegah Maasoumi** and Dr **Scott Watkins** (with endlessly patient partners).

9 May: Communicating Science in a Post-Normal World



A joint presentation with the Monash University School of Media, Film and Journalism as a part of the "Media Matters" seminar series. A keynote from Dr Mike S. Schäfer, Professor







of Science Communication with the University of Zurich's Department of Communications and Media Research, and a panel featuring Professor **David Karoly** MRSV (CSIRO) and Dr **Linden Ashcroft** (The University of Melbourne).

15 May: Science Gossip: Woodland Rumours and Thinking Trees







As a part of our contribution to the ART+CLIMATE=CHANGE festival convened by Climarte, the Society's members and guests wandered the rooms of our heritage

building, discovering new ideas, hypotheses and research findings presented through 19th century salon-style discussions, exhibits and performances. We planted artists and philosophers in common ground with scientists working to unravel the secrets of forest communication, connection and community. Through discussions, musical performance and art installation we invited attendees to consider the inner lives of trees and our relationship with them. Featuring a keynote presentation and book signing by Evolutionary Ecologist Dr Monica Gagliano from the University of Sydney's School of Life and Environmental Sciences, an exquisite performance from clarinettist and acoustic ecologist Ms Vicki Hallett, a whirlwind tour of forest fungi with Royal Botanic Gardens ecologist Dr Sapphire McMullan-Fisher, an augmented reality installation by artist Anna Madeleine from the ANU School of Art and Design and a consideration of panpsychism from Adjunct Professor Freya Mathews, an Environmental Philosopher with La Trobe University.





From left: Dr Sapphire McMullan-Fisher, Ms Vicki Hallett, Dr Renee Beale (convenor), Dr Monica Gagliano, Adjunct Professor Freya Mathews, Ms Anna Madeleine.

16 May: The Future of Victoria's Environment



A presentation on the latest iteration of Victoria's *State of the Environment* report from the Office of the Commissioner for Environmental Sustainability's Science Team, featuring Dr **Scott Rawlings** and Mr **Andrew Marshall.** Scott and Andrew canvassed climate change impacts, biodiversity, marine and coastal environments, waste and resource recovery, and the evidence base informing the Commissioner's key recommendations.





24 May:

Climate Change in the Classroom



A teachers' Professional Development Workshop facilitated by colleagues from Monash University's Faculty of Science in partnership with the International Science Council and the Royal Society of Victoria. Convened by Dr James Driscoll MRSV.



6 June:

Road Safety Vision Zero: the Science and the Technology



Addressing the development of safer roads and Victoria's next Road Safety Strategy. Featuring a keynote from Dr **Johan Strandroth**, Project Director at the Department of Transport, the forum was convened with the Australasian College of Road Safety and Safe System Solutions to celebrate their several receipts of Prince Michael Road Safety Awards









in 2017. Panellists included Mr Kenn Beer (MC), Dr Marilyn Johnson, Mr David Shelton, Dr Max Lay MRSV and Ms Samantha Cockfield.

6 July:





A joint workshop with Gardens for Wildlife Victoria and the Victorian Environment Friends Network, sharing case studies of people caring for nature in diverse places, from schools to suburban backyards, creeks and nature reserves. Speakers included **Peter Noble** (Ballarat Environment Network) on "linking groups to transform landscapes," **Irene Kelly** and **Kerry Davies** (Knox Gardens for Wildlife) on "linking schools and gardens for wildlife," **Anthony**

Bigelow (First Friends of Dandenong Creek) on "crowdfunding and revitalising a Friends group," and Charlotte Fletcher (Royal Botanic Gardens Cranbourne) on "helping bandicoots from reserves to suburbs.

14 August:

Stories from the Cosmos: What Indigenous storytelling can teach us about memory



To celebrate National Science Week, the Society hosted an edition of the Melbourne School of Psychological Science's "Psychtalks" program, where an expert panel explored the systems, methods and materials that enable Indigenous cultures around the world to hold

and transmit information with remarkable fidelity from one generation to the next through mnemonic disciplines and the knowledge encoded in cultural practices. Featuring Uncle Dave Wandin on behalf of the Wurundjeri, Dr Meredith McKague (MC), Ms Kat Clarke from Wotjobaluk Country (near Horsham), Dr Simon Cropper, Dr Lynne Kelly and Associate Professor Duane Hamacher MRSV.



17 August: Student Start-Up: Entrepreneur Pitch Session and Networking



Participants working with Student Startmulti-partner accelerator Up, program designed to help high-school students grow their ideas into a business, pitched their business idea to the audience and a panel of experts at the Society, seeking advice, mentorship and investment. This was followed with



a networking event convened by the Banyule Nillumbik Tech School, featuring the "Science Behind Cheese" with That's Amore Cheese and the remarkable outputs of Melbourne Polytechnic's viticultural efforts from vineyards across Yarra Glen, Ararat and Yan Yean.

17 August: The Alchemist: Turning Waste into Wealth



Australian waste is sent offshore as someone else's problem. But these are valuable materials that are waiting for a second life. ARC Laureate Professor Veena Sahajwalla, Director of the Centre for Sustainable Materials Research & Technology at the University of New South Wales, was our guest for National Science Week. Veena wants us to pioneer distributed recycling methods here in Australia through innovations in chemical engineering and materials science.

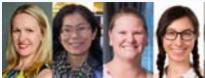


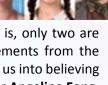
David Zerman with Professor Sahajwalla, showing off his recycled frames made from materials produced by Veena's microfactory process.

18 August: Spot the Bull...Science



The Nation celebrated Science National Science Week with the Society with a contest of intelligence, interrogation and deceit. The premise was simple - Victoria's best and





brightest scientists present three scientific 'facts'; the catch is, only two are correct! The audience's job is to discern the truthful statements from the fiction while the scientists do their Oscar-winning best to fool us into believing the latter. Featuring the deceitful talents of Dr Jess Borger, Dr Angelina Fong, Dr Kate Fox, Ms Catriona Nguyen-Robertson and Dr Mohammad Taha.

20 August: Kids' Conference Workshop

In partnership with the Australian Catholic University and Cultural Infusion, a professional development opportunity for teachers and coaching for students in developing research ideas, then communicating their methods and outcomes in the formal conference setting, held at the ACU's Fitzroy campus in November. The initiative of **Stephen Spain** MRSV.

Wide Conference IRVOXConference—Aug 30, 2079 Thank you to the amazing Rob Gell from the IRRoys/SocietyVic for an informative and flasorating introduction and Adherosologyment of Country at the #Melbourse2019 Ribb Conference Workshop, What a we to start the IRV



28 August: Let's Torque Grand Final



This student-led, pan-institutional undergraduate science communication competition returned to the Royal Society of Victoria for another night of top-quality presentations by the next generation of Victorian STEM communicators on "innovative science with impact." The finalists worked through months of workshops and presentations to share some of today's most exciting STEM solutions with us all. The standout presentation on the big night was from Ms Meaghan Smith (pictured right), who presented on the instantaneous identification of asbestos using Artificial Intelligence. Congratulations on an outstanding effort to the



whole 2019 competition team, enthusiastically led by Ms Amelia Pearson.

11 September:

Victoria's Environment: Adapting to the New Normal



Our Patron, the Governor of Victoria's Environmental Science Public Lecture commissioned some of Victoria's leading experts to speak on ideas and solutions being developed to adapt to the challenges of Victoria's warming climate to a capacity audience in the Ballroom of Government House. Featuring A/Professor Anthony Boxshall (moderator), Professor Richard Eckard (University of Melbourne), Professor Roslyn Gleadow (Monash University), Professor Nigel

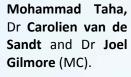


Tapper (Monash University) and Dr Pandora Hope (Bureau of Meteorology)

6 November: Science Says



A **Science Nation** event bringing together scientists, comedians and communicators to uncover the top scientific discoveries of 2019. Featuring Associate Dr **Kiri Beilby**, Professor **Jared Cole**, Dr **Kate Fox, Tom Lang**, Dr









21 November: Gene Tree Project: Music on the Evolution of Species





We spent a musical evening with talented jazz quintet **Gene Tree Project** led by **Elissa Goodrich**, performing original music inspired by climate science and the adaptation story of the peppered moth. A celebration of 160 years since the publication of Darwin's *On the Origin of Species*, the musicians were joined by evolutionary geneticist Professor **Andrew Pask** and threatened species biologist Dr **Amy Coatsee** to reflect on the work underway in Victoria to help native species adapt to unprecedented threats to persistence and survival.





MEMBERSHIP & MENTORING

Dr S. Frentz & Dr G. Smith (Co-Chairs)

In 2017 the Membership and Mentoring program was launched to focus on ensuring the sustainable growth of the RSV and, in particular, support for younger members of the Society.

2019 was not a good year in terms of the scale and diversity of our membership. Our overall numbers contracted, with many student members not renewing, particularly those returning to countries of origin at the completion of studies or taking up postdoctoral positions overseas. Our numbers at the end of the year were down to 588 members from 742 in 2018. Our average age rose from 54.4 to 59 years. Our gender ratio skewed back towards an overwhelmingly male representation. While some of this movement may be due to a correction in "real" numbers arising from the rollout of our new

Moving forward, ensuring the ongoing diversity of our member base is key to keeping the RSV relevant and engaged in the community. This means not only diversity in age and gender, but also engaging with Culturally And Linguistically Diverse (CALD) communities, the LGBTQ+ community, and ensuring we maintain a good mix skills and abilities. We do this by seeking visible diversity within our leadership, speakers, membership, staff and programs, and being vigilant in supporting and engaging people with different backgrounds and experiences with the majority of RSV members.

Membership 2019

Council has discussed membership issues at all meetings. Our membership continues to experience a high turnover, particularly from earlier years' applicants for the Young Scientist Research Prizes. Establishing and maintaining relevance for our younger members remains a key priority, as does the involvement of women in membership and leadership.

Changes to Membership	2014	2015	2016	2017	2018	2019
Total Individual Membership	604	561	587	639	742	588
Gender Ratio (Women : Men)			30:70	33 : 67	34 : 66	30:70
Average Age (years)			57.1	57	54.4	59
Culturally and Linguistically Diverse Background (%)						5.95

130 Years of Women at the Royal Society of Victoria

membership database, it is important not to be complacent.



On 10th October, 2019 we celebrated 130 years to the day that the first woman signed into our historic members register in 1889. The daughter of Dr James Edward Neild, the Society's Honorary Librarian, Ms Helen (Nelly) Neild MRSV (pictured left) was a zoology graduate, among the first young women to attain a Bachelor's degree from the University of Melbourne.

A special gathering of our female members and their guests commemorated Ms Neild's pioneering spirit, further celebrating

the first female scientist to publish in the Society's Proceedings (1897), zoologist Ms Georgina Sweet MRSV (pictured right). Georgina's father George was a Councillor of the Society (later President in 1905) and her research supervisor and

264

mentor was Professor Walter Baldwin Spencer, also a Councillor and President (1904) of the Society. Georgina became one of Australia's pioneering academic women, the first in the nation to achieve the rank of Associate Professor (1920), at the University of Melbourne.

XVII.—On the Variations in the Spinal Nerves of Hyla aurea. By Miss Georgina Sweet, B.Sc. ...

Present at the gathering were







On 10 October 1889 Nellie Nell's became the first female member of the Royal Society of Victoria. Today 130 years later I joined too. So please to be presented a set of proceeding from 1897 in celebration of our conservation work. #wooderfullife #ray



MRSV, CEO of Zoos Victoria. Acknowledging the enduring theme of zoology with our pioneering women, each were presented with an original copy of our 1897 Proceedings (Volume IX, new series) featuring Dr Sweet's first published paper on the nervous system of the Common Golden Tree Frog.

Following the function, our members joined guests of the Society to enjoy Dr



Sapphire McMullan-Fisher's presentation on the role of fungi in bushland ecology, chaired by our Vice-President Mrs **Nicola Williams**, with our 2019 Fellow Professor **Sandra Rees** offering the vote of thanks.

STEM Careers in Industry

On 28 March we hosted an Industry Mentoring in STEM (IMNIS) event, inviting research student members to join with IMNIS mentees to hear from and network with STEM professionals with experience in the MedTech-



Pharma and Energy-Minerals industries. Compered by Dr Richard

Huysmans (Principal Consultant, Raven), the panel session featured insights from Dr Sue Amatayakul-Chantler (Associate Director, CSL Behring), Dr Sophia Frentz (Analyst, Deloitte), Mr Eric Hayes (Senior



Project Leader, BioCurate), Dr Dong Yang Wu (Group Chief of Aerospace Division, Defence Science & Technology) and IMNIS Executive Director Dr Marguerite Evans-Galea.

Field Trips and Field Work

In 2019 our excursions were offered through a variety of partners and auspicees, including:

Wild DNA



The Society began acting as auspicor of community group **Science for All** in 2018, a citizen science initiative that brings volunteers together with environmental scientists working in Victoria's state forests and national parks. The "Campfires and Science" program encourages volunteers to spend time on site, sharing

food and a campfire, and hearing science talks from invited speakers. In 2019 this evolved into the "Wild DNA" project supported by a grant from DELWP, commissioning community field work and training in research methods to seek evidence for activity by threatened and protected species in key locations in the forests of the central ranges and the northern suburban fringe of Melbourne.

2019 field trips included: Cambarville (16 March), Kororoit Creek (29 June), Toolangi (27 July), and Yellingbo (23 November). The team shared knowledge with over 300 people through directly involving them in research. They tested new ways of detecting critically endangered species – including using mosquito traps, soil sampling and water testing. Participants heard from experts, including Aboriginal elders, researchers and trained people of all ages in collecting environmental DNA samples.

Discovering the Eucalypts of the Brisbane Ranges



Leon Costermans in the field at Djerriwarrh Creek.

Undertaken once again as a part of National Eucalypt Day in March 2019, this wonderful trip to the Brisbane Ranges (just outside Melbourne), an area of concentrated plant diversity in Victoria, introduces participants to the variety and characteristics of different species of eucalypt and the range of their expressions under different conditions. Costermans MRSV emphasises how the enormous diversity of species found in this region are a product of the area's unique geology. Our thanks to Leon, and to Australia Eucalypt for this enduring annual collaboration.

RSV Members' Conference

In early May 2018 we announced a proposal to develop the plot of land vacated by the Bureau of Meteorology's urban weather station in 2014. The culmination of three years of discussion and negotiation between the Society, Decibel Architecture and Grocon, the proposal now titled "1 Victoria Street" is a profit-sharing model that enables the refitting and refurbishment of our existing buildings and development of new facilities over the footprint of our current car park. This would be enabled through the construction and sale of an apartment tower on the former Bureau site – a "skinny tower," tuned to the wind.

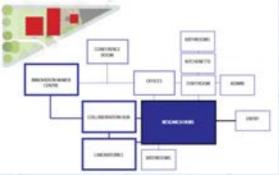
With the support of a Special General Meeting of members on 21 June 2018, the Society proceeded to formulate and execute a

proceeded to formulate and execute a partnership Heads of Agreement with Decibel and Grocon on 10 October 2018. The Society then conducted a further Council strategic forum in December to consider the vision that the proposed development will be enabling — "RSV 2054," a consideration of the year our organisation turns 200, and what we aim

for in the character and scope of the Royal Society of Victoria's programs at that time.

Honouring commitments made to our members to provide opportunities for closer involvement in planning, we convened a further members' conference in February 2019 to consider the nature of the proposed project as a beacon for science, a benchmark for sustainable development and a design approach to support urban biodiversity. We spent a remarkable day with our members and talented partners from Decibel Architecture





defining the future of our site, and of our organisation, as it was impossible to separate one from the other!

An exciting vision is taking shape for the Society's revitalised and continually evolving role in serving Victoria and Victorians. The many outputs that flowed from the day's proceedings include the following themes:

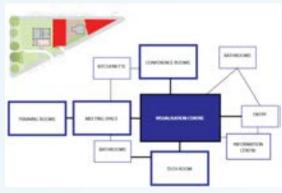
A Community-Focused Scientific Research Centre

Connecting scientific research to the broader community through providing an accessible hub for interaction with research outputs,

including a scientist-in-residence program. Opportunities include providing support for "pop-up" research groups to help deliver short-term, goal-oriented science, including citizen science groups; "deep" research groups looking into specific state priority areas in partnership with the Victorian government; and onsite accommodation for visiting scientists of note.

Data Observatory: A Visualisation and Communication Centre

Ideas from the conference included: environmental data being read and displayed from sensors on site; a modern science museum powered by the tower and other site facilities; school programs; entry fees/revenue raising; engagement and collaboration with government, science professionals, public, citizen scientists; observation, analysis and communication of environmental data from around Victoria/Australia - curated according to issues at hand. This would require upgradeable and scaleable technology, and a business team to curate, manage and maintain the program.



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Earthscaping: Urban Ecology

A perspective on our site as a biosphere of nature flora and fauna, journey-orientated to communicate environmental science and sustainable engineering principles through a curated site. The conference focussed on short-term ideas such as: demonstrating food production on a small footprint (hydroponics, aquaponics); vertical green canopies to reduce heat at the ground level; green roofs; canopies and other connections to surrounding environments on each side of our triangle (such as Carlton Gardens). A longer-term perspective considered an opportunity to physically address more

than just our current site, "exploding" out from our current spot in a high density road grid to connect green corridors throughout metropolitan Melbourne, leveraging our location as a physical, cultural & historical

"fulcrum" for the Carlton Gardens, Melbourne Museum and the CBD.

Future Foods Focus

Raising revenue within the RSV site by offering the general public a "future food" hospitality venue, selling, communicating and educating people about the possible futures of food, highlighting awareness of indigenous/native food sources. Utilising and demonstrating systems for on-site cultivation and production of food sources to illustrate the possibilities of small urban farms. For other consumables: sustainability, food miles and production techniques need to be considered, governed by a charter of procurement & other business guidelines.





Other Considerations

The Conference addressed a range of strategic and mission-based initiatives that expand on the Society's current role, including: the institution-neutral brokerage of scientific expertise for governments and enterprises; a more vigorous focus on primary and secondary students through curriculum alignment and teacher professional



development programs; and the enduring builder of our ever-changing network of science educators, students, researchers, communicators, legislators, enablers and enthusiasts.

These and all other outputs from the Members' Conference were published to the Society's new **Slack** channel to provide members with further opportunities for reflection and to contribute ideas. All current members have access. These outputs now reflect the brief to our architecture partner, Decibel, in refining the scope of what we need to achieve from the redevelopment and extension of our existing facilities, and the technical functions of the proposed, adjacent tower.

Our thanks to all members who have and continue to engage with this challenging, extended process, which meaningfully informs our work with our project partners. We aim to progress our collective vision for the site in 2020.

Dr Sophia Frentz and Dr Gavin Smith, Co-Chairs

PUBLICATIONS, RECORDS & COLLECTIONS

Dr W. Birch AM (Chair), Dr T. Darragh, Dr D. McCann

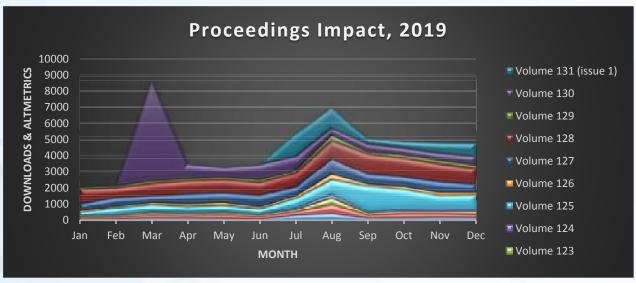
There was limited albeit valuable progress made in some aspects of our work across this portfolio.

Emma Mayall, an art curator and Masters intern in Informational Management, Library and Information Science with RMIT University (pictured right), completed a case study of our heritage library, with a particular focus on the non-English journals held in the Von Mueller Room. Her report made very useful recommendations on how to



catalogue the journals and arrange them in themes, which will prove valuable for the library's future management.

Work was completed at Museums Victoria on the digitising of a full run of our *Proceedings* (plus or minus *Transactions*) journal for the Biodiversity Heritage Library. High-quality scans of individual papers going back to the first issue in 1859 are now available online using this link: https://www.biodiversitylibrary.org/bibliography/50009#/summary. These are a considerable advance on the digitised versions available through the State Library of Victoria. Discussions on the Society's various assets lodged with the State Library were held in abeyance this year, but we intend to renew contact as soon as possible.



Volume 131 of the *Proceedings of the Royal Society of Victoria* was successfully published online with CSIRO Publishing. While the number of papers remains quite low, the quality is high in terms of content and presentation. CSIRO Publishing recently provided some interesting metrics relating to downloads, click-throughs, and Altmetrics to capture the reach, influence and public attention received by articles in the Proceedings.

The most read paper for the year described the new **Maryborough meteorite** from Victoria, with online viewing no doubt enhanced by the considerable media coverage generated by Museums Victoria and the Society. The most impactful volume was the second edition of Volume 130, released in early 2019, dedicated to the research of the **Moyjil** site at Warrnambool and conjecture over the human origins of a coastal midden dated at up to 120,000 years old.

While members and the general scientific community can download all the papers from the CSIRO publishing website, a limited run of hard copies of the complete volume 131, containing both issues, is currently with the printer, however delivery may be delayed due to the current restrictions. Once again, I wish to thank our copy editor, **Barbara Vaughan**, for her excellent work on the journal.

Dr Bill Birch, Chair

Publicity, Media & Public Relations

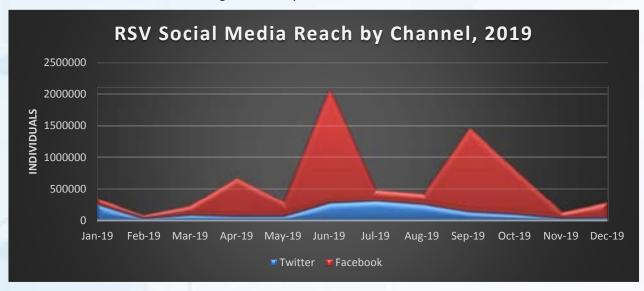
While it is difficult to quantify the profile and standing of an organisation, the digital age is providing many valuable tools for measuring the impact of promotions, events and news in the public realm. Both traditional 'print' media and new social media channels offer opportunities for quantifying impact.

Social Media

Interaction with Victoria's science community and the broader public continued through social media channels **Twitter** and **Facebook**, with a new **Instagram** account continuing to build a subscription base. Our new **YouTube** channel continued to share high-quality video from our talks and events with our members and supporters.

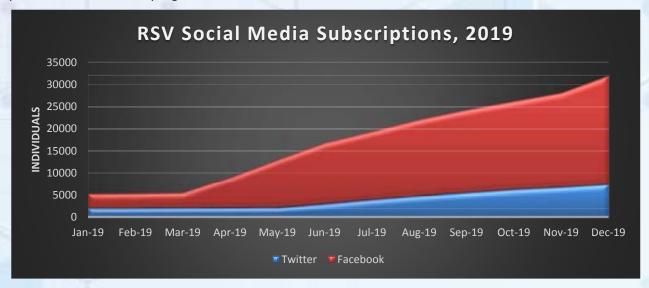
These channels have helped the RSV reach "organic" audiences without recourse to expensive print advertising or reliance on "newsworthiness" through traditional media channels – our content is delivered directly to people who profess an interest and their broader social and professional networks. This has been particularly helpful in communicating our events, news, awards, award winners and significant position statements on current affairs in Victorian science.

The charts that follow tell something of the story:



The chart above represents the number of individuals to whom an RSV news item was delivered over the course of the year. Compared to earlier years, audiences on both Facebook and Twitter have responded particularly well to two things: one, the publicity surrounding the Society's promotion of **National Science**

Week leading up to August and; two, the global sharing of the Society's professionally filmed videos of key presentations from our program.



The chart above represents growth in the RSV's subscriptions, or **active followers** of our social media feeds over the course of the year. Our followers are the main source of impact for our stories and news items, as these are people who "like" or "share" our content to a broader network of friends, family and colleagues. The trend over five years from just over 100 total subscribers to over 30,000 at the end of 2019 reflects a recent, concerted effort to secure wider audiences in support of National Science Week and the Inspiring Victoria program.

According to Social Media Statistics Australia, approximately 15,000,000 Australians were actively subscribed to **Facebook** as of December 2019. While this represents static growth across three years, the high figure reflects market saturation, making it a clear standout channel for potential audience engagement. **YouTube** enjoys the same status.

While local audience share remains less than Facebook's, **Twitter's** 5.3M active Australian users represents a 13% growth over 2019, and include many scientists and science proponents, providing a terrific platform for communication and alignment with the science community at home and abroad. The RSV's "reach" through Facebook has again eclipsed Twitter's in 2019, although this reflects the impact of paid advertising for the Inspiring Australia program; "organic" reach is essentially on par, which favours Twitter's efficacy with a smaller user and subscription base. 2019 marked the second year using **Instagram**'s platform based on its 2017 growth to 9M active Australian users, which

has since remained static; our subscription base has grown slowly to about 500.

While our new **YouTube** channel has been excellent for hosting our high-quality videos for further sharing via Facebook, Twitter and our website, our subscription base via that channel remains very small at inception.

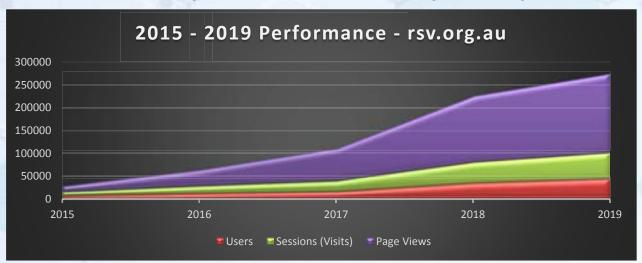
RSV Website



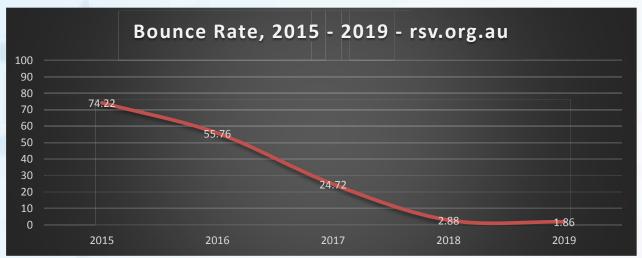
We've been tracking our website usage data through Google Analytics for some years now. Generally our website has been an "online brochure" to inform others of our history, role and purpose, but has also been a platform to showcase upcoming lectures and events and, increasingly, post articles reviewing and reflecting on these – a new channel for what has traditionally been referred to as our "Transactions." The

creation of content from our presentations and programs has been of a very high standard in 2019 thanks to the outstanding efforts of science communicator **Catriona Nguyen-Robertson**, with further, significant work undertaken by **Kate Bongiovanni** and **Priya Mohandoss**. Our thanks to all our writers for bringing the science program to a much wider reading audience.

The particular "bump" to our website visits that came early in 2019 correlates with the RSV's call for Expressions of Interest in joining the **Scientific Advisory Panel** to advise the Minister for Energy, Environment and Climate Change on the modernisation of Victoria's Regional Forest Agreements.



Further, an investment in capturing and editing professional video footage of our lectures, along with interview material featuring our speakers, has created high-quality material for sharing online with members and supporters. The graph above shows the steady growth in audience engagement with our website's content over the past five years – in 2019 we welcomed a total of 35,000 users to our website for a total of 46,000 visits, viewing individual RSV pages/posts 145,000 times. The graph below shows the "bounce rate," or the number of visitors who viewed only one page on our website without looking around at other content. Essentially, a low bounce rate is "good," and we are tracking very well indeed in terms of providing a diversity of content with high interest for our readership.



Traditional & Digital Media

The RSV occupied unprecedented space in traditional news media for a range of reasons. In terms of our core activities and mission, mentions were generated through publicity for the **Inspiring Victoria** and **National Science Week programs**, a partnership with **ABC Radio National** and the ABC Science team in producing content for the **Ockham's Razor** show presented by Robyn Williams AM, and support for various citizen science programs in Victoria. However, the global impact of the RSV was substantial in 2019 thanks to the interest garnered in two successive editions of the Proceedings of the Royal Society of Victoria, in particular the international interest in the **Moyjil** site at Warrnambool and the **Maryborough Meteorite**.

Drawing on 2019 circulation metrics published by each media outlet and ethnic population data published by the ABS, we are able to approximate the impact of traditional journalism concerned with the Royal Society of Victoria.

In terms of qualitative measures, this coverage purposefully conveyed the globally significant work of scientists working in the State of Victoria, demonstrating the value in providing the *Proceedings* as an open access, free-to-publish resource to our science community.

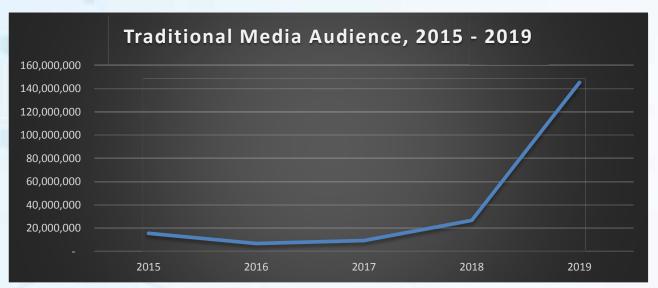


Above: Professor James Bowler FRSV at the Moyjil site near Warrnambool.



OUTLET	DATES	AUDIENCE REACH/CIRCULATION
ABC RADIO NATIONAL	6 dates for Ockham's Razor	3,666,000
THE GUARDIAN	11 March, 2019	3,100,000 (print) 24,000,000 (online)
DAILY MAIL	15 March, 2019	6,802,000 (print) 25,000,000 (online)
NEW ATLAS	15 March, 2019	4,280,000 (online)
THE HERALD SUN	16 March, 2019	2,100,000 (print) 2,400,000 (online)
THE ADELAIDE ADVERTISER	20 March, 2019	682,000 (print) 1,400,000 (online)
COSMOS	25 March, 2019	87,000 (print) 130,000 (online)
THE STANDARD (WARRNAMBOOL)	29 March, 2019	45,945 (combined)
THE AGE	21 June, 2019	4,579,000 (combined)
SCIENCE ALERT	18 Juy, 2019	10,000,000 (online)
IFLSCIENCE	18 July, 2019	50,000,000
GEELONG ADVERTISER	14 August, 2019	134,000 (print) 263,600 (online)
DUNYA NEWS	29 December, 2019	55,000 (combined)
THE AGE	31 December, 2019	4,579,000 (combined)
	Total 2019 Audience Reach:	145,203,545

Left: Dr William Birch MRSV & Mr Dermot Henry with the Maryborough Meteorite at Museums Victoria.



Direct Mail & Online Event Registration

With postage costs continuing to rise, and the negative impact of physical mail-outs on our staff resources, we continue to emphasise communications to members and friends through email. Further progress was made through our email subscription base (mailing list) with MailChimp, which enables the RSV to segment our mailing list, targeting different audiences according to the matter at hand. There were 5386 mailing list subscribers as of December 2018, up from 1569 as of December 2017. Response to RSV newsletter and bulletin emails has continued to be excellent for the non-government sector, averaging a 28.8% open rate

(19.9% for the sector) and a 4.4% click rate (2.2% for the sector) – however these numbers were significantly down on 2017's response rates, meaning our audience engagement has diluted with the added volume, and that the most vigorous response can be found with our committed members!

Further, use of **Eventbrite** as an online ticketing tool for RSV events has provided not only a streamlining of office procedures and workloads, but also a valuable channel for cross-promotion of events and provision of metrics to better understand how audience members are discovering and attending our lectures, symposia and other activities. The integration of Eventbrite tools with Facebook and Twitter has noticeably brought a more vigorous engagement with our science engagement and promotion efforts.

Mike Flattley, Chief Executive Officer



SCIENCE POLICY & COMMUNICATIONS

Dr P. G. Baines (Chair), Dr W. D. Birch, A/Prof. R. Day, Prof. R. M. Gleadow

The RSV maintains a standing file of Policies that it advocates, in the interest of Australian Society in general, and Science in Australia in particular. We currently have a list of nine policy statements that cover topics such as the Preservation of Leadbeaters' Possum and the Beaumaris Bay fossils. Our most recent statement, posted in July 2019, concerns the **adverse effects of climate change** and the importance of reducing greenhouse gas emissions to mitigate the direst

consequences of unregulated human activity on the world's complex systems and the life they support. This needs to occur on a global basis, and Australia and Victoria must accept responsibility for our part in lowering emissions.

Last year the Society joined **Science & Technology Australia**, which holds an annual meeting in Canberra entitled **Science Meets Parliament**. Two RSV councillors attended, Dr Peter Baines and Dr Catherine de Burgh-Day, and it gave us a lot of opportunity to wave the Society's flag and establish relationships with colleagues and parliamentarians.



Modernisation of the Regional Forest Agreements



In December 2018 the Society was commissioned by the Department of Environment, Land, Water and Planning (DELWP) to assist in brokering appropriate scientific expertise to populate a **Scientific Advisory Panel** to synthesise the diverse and complex scientific inputs to the renewal of Victoria's Regional Forest Agreements and contribute recommendations to the Department for consideration. We convened a











recruitment panel from our membership consisting of Dr William Birch AM (Chair), Professor Roslyn Gleadow, Dr Tom Beer, Professor David Walker and Dr Bram Mason to oversee the Society's Expressions

of Interest process. Our thanks to our colleagues for undertaking this challenging task on behalf of the Society and its members.

Our recruitment panel sought colleagues with expertise across Biodiversity Conservation, Forest and Landscape Ecology, Hydrology, Ecosystem Services, Climate Change, Adaptive Management and Environmental Economics, for appointment in early 2019. Following a rigorous process of scoring and assessment of applications, the recruitment panel recommended the following colleagues for appointment













to the Scientific Advisory Panel: Dr Sandra Brizga (Chair), Dr John Raison (Deputy Chair), Professor David Lindenmayer, Dr Lyndall Bull, Associate Professor Lauren Bennett and Dr David Cheal.

The Panel was appointed by DELWP to provide independent, science-based advice to inform modernised Victorian Regional Forest Agreements and design of a contemporary forest management system that is resilient and adaptive to a changing climate and the associated management challenges.

The Scientific Advisory Panel had briefings on a range of forest issues and members have contributed their own specialist knowledge to discussions and debate around the complexities of forest management.

The Panel have produced a report of "Scientific Advice to Support Regional Forest Agreement Negotiations" which includes advice and recommendations on:

- Improvement of the management of Matters of National Environmental Significance in the RFA system
- Refinement and better management of the Comprehensive, Adequate and Representative reserve system
- Implications of climate change for the full suite of forest values and potential improvements to the RFAs to ensure appropriate management
- Active management of forests to support a range of outcomes
- A strategic approach to the development of new plantations
- Development and implementation of a more adaptive forest management system.

While the panel agreed on many points, advice provided by some members of the panel was not agreed by all. Understanding and capturing dissenting views is important as it helps build understanding of the complexities of forest management and assists with identification of priorities for future research and investment. Dissenting views are acknowledged and presented with the report, currently available online at https://www2.delwp.vic.gov.au/futureforests/what-were-doing/?a=444787.

Advice from the Scientific Advisory Panel informed modernised Regional Forest Agreements and improvements to Victoria's forest management system.

The Science of the Regional Forest Agreements – Community Briefings



While the Scientific Advisory Panel undertook its work, the Society partnered with DELWP to provide a series of public scientific briefings to the groups and communities concerned (and our members) over the course of 2019, informed by the criteria identified in the Commissioner for Environmental Sustainability's 2018 *State of the Forests* report. The Society convened audiences comprising

members of conservation groups, industry representatives, research scientists and independent scholars to hear from leading Australian scientists with relevant expertise and engage in challenging room discussions, chaired by the Society's CEO, **Mike Flattley**.



The first of these was held at the Society on 20 December 2018, launched by the Victorian Minister for Energy, Environment and Climate Change, the Hon Lily D'Ambrosio MP. Presentations provided technical

briefings on **contemporary forest science** including research projects funded through the Department. Topics included work underway:

- to survey and model the habitat of threatened species (Dr Lindy Lumsden and Dr Graeme Newell, Arthur Rylah Institute)
- to update mapping of old growth forests and rainforests (Associate Professor **Craig Nitschke**, University of Melbourne)
- to leverage and address gaps in an existing body of research on the values communities hold for Victoria's forests (Dr Rebecca Ford, University of Melbourne)





The second lecture was held on 13 March 2019 under the theme "Conservation of Forest Biological Diversity." Presentations focused on:

- New insights into ecology, dynamics and management of ash-type eucalypt forests based on long-term research (Professor **David Lindenmayer**, Australian National University)
- DELWP-RMIT Partnership: a decade of remote sensing science supporting forest policy (Professor Simon Jones, RMIT University)
- Assessing genetic risks to Victorian flora and fauna for conservation planning (Dr Emma Razeng, Monash University and Dr Peter Kriesner, cesar Australia/University of
- The Conservation Status Assessment Project (Vanessa Craigie, DELWP Biodiversity Division)

Melbourne)



The third lecture was held on 21 May 2019 under the theme "Maintenance of Productive Capacity of Forest Ecosystems," held at the Lilydale (Lakeside) Campus of the Box Hill Institute thanks to the support and partnership of the Yarra Ranges Tech School. Presentations included:

- Dr. William Jackson (Environmental Consultant, formerly Parks Victoria Chief Executive) on the findings of the Independent Consultation Paper: Modernising the Victorian Regional Forest Agreements
- Wood+: Insights and lessons from an analysis of the history of planted trees in Australia (Mr Braden Jenkin, Institute of Foresters of Australia)
- Testing Tolerance: Frequent high-severity wildfire and regeneration of temperate eucalypt forests (Dr Tom Fairman, University of Melbourne)
- Challenges and opportunities for Victorian native forest silviculture in the 21st Century (Professor Patrick Baker, University of Melbourne)



The fourth lecture was held on 25 July 2019 under the theme "Conservation and Maintenance of Soil and Water Resources." Presentations included:

- Forests and Water: Challenges, uncertainties and decisions (Professor Patrick Lane, University of Melbourne)
- Remember the Millennium Drought? Well, so do our rivers... (Ms Rachel Brown, DELWP Water & Catchments Group and Dr Tim Peterson, University of Melbourne)
- Climate risks and science-policy interface dilemmas in Australia's Murray Darling Basin (Mr Jason Alexandra, Alexandra Associates)
- Post-fire runoff and erosion processes
 (Dr René Van der Sant, Melbourne Water)









The fifth and final lecture was held on 24 September 2019 under the theme "The contribution of forests to

global carbon cycles." Presentations included:

- Assessing the carbon stability of fire-tolerant forests in fire-prone landscapes (Associate Professor Lauren Bennett, The University of Melbourne)
- Opportunities for Victoria's Traditional Owners and Catchment Management Authorities to participate in the carbon market." (Ms **Zoe Ryan**, Climate Friendly)
- The role of forests in the global carbon cycle, with an example from the Victorian wet sclerophyll forests (Dr **Heather Keith**, Australian National University)
- Increasing tree and forest carbon stocks in Victorian landscapes: accounting, policy and implementation challenges (Professor Rod Keenan, The University of Melbourne)









Outcomes

The year's various activities culminated in the announcement by Minister D'Ambrosio on 7 November of a planned phaseout of all logging in Victoria's native forests by 2030, with 90,000 hectares of Victoria's remaining rare and precious old growth forest protected immediately. The accompanying Action Statement provides a roadmap to protect the Greater Glider and more than 35 other threatened species of fauna and flora, including the Leadbeater's Possum.

In light of a truly catastrophic fire season that has since ravaged Victoria's forests and their attendant wildlife, we hope these measures offer some reassurance that we are making a genuine difference to the survival of our indigenous plants and animals through our collective efforts as a Society and a community of scientists.

- Dr Peter Baines, Chair



SCIENCE OUTREACH & PARTNERSHIPS

Ms Pamela Borger (Chair), Ms Helen Van De Pol, Dr Amy Nisselle, Dr Sophia Frentz, Mr Siddharth Verma, Mr Stephen Spain

2019 was a year of refocusing the Committee's work to complement the Society's second year as the managing organisation for the ambitious **Inspiring Victoria** program, a state-wide science engagement program co-funded by the Commonwealth Department of Industry, Innovation and Science, the Victorian Department of Jobs, Precinct and Regions, and the Royal Society of Victoria.



The **Inspiring Victoria Board** was once again Chaired by Victoria's Lead Scientist, **Dr Amanda Caples**, with senior members from the RSV, Questacon, Museums Victoria, CSIRO, ATSE, veski, Citizen Science Victoria,

Public Libraries Victoria and the Department of Education's Tech Schools program. The Victorian Coordinating Committee for National Science Week functions as a committee of the Board, Chaired by Dr Peter Skilton, with representatives from

universities, Scienceworks, government, community and industry. These governed and delivered our major community engagement

initiatives concerned with regional STEM hubs and the delivery of National Science Week, while the RSV's Outreach and Partnerships Committee focused on offering and delivering three rounds of grants to the newly-established **Inspiring Victoria Partnership Network**, taking in all 260 public libraries across Victoria and the 10 new Tech Schools. Over the course of the year we disbursed 26 grants amounting to \$48,000 across Victoria, with a pleasing balance between metropolitan, regional and rural programs funded. The focus has overwhelmingly been concerned with providing activities and



Inspiring

materials focused on early years, primary school aged children and their families, with an extension into teen coding clubs and a promising citizen science project in Whittlesea. We look forward to seeing more mature-age initiatives in future to balance these early efforts. Our thanks are extended to grants officer Ms **Ann Woelk** for her work with grant applicants and their diverse community science engagement programs.

National Science Week - Victoria

Launch: 9 August

Science at the Extreme



2019 signalled a much closer engagement and alignment between the Royal Society of Victoria and Museums Victoria in the delivery of National Science Week in Victoria – our grateful thanks to all our Museum colleagues for their excellent collaboration, particularly Jen Brook, Justin Wright, Kate Phillips, Kate Barnard and Dermot Henry.



Science Week 2019 was officially launched by Victoria's Lead Scientist, Dr **Amanda Caples**, at the Science at the Extreme event hosted by the Melbourne Museum. A high-calibre event to introduce and feature our international and interstate speakers ahead of their statewide engagements, the event was attended by 344 people and kicked off a broader Science Week program at Museums Victoria.

From the frozen tundra of Antarctica to the deserts of central Australia, from the lava flows of Hawai'i to the depths of the world's deepest abyss off the Eastern coast of our continent, we brought together a dream team of science adventurers to share their journeys and discoveries, and to celebrate the launch of Science Week 2019.

The panel included:

- Dr Darlene Lim, a geobiologist based at the NASA Ames Research Center in California
- Dr Kate Selway, an Earth scientist from Macquarie University
- Dr Dianne Bray, an ichthyologist and Senior Curator of Vertebrate Zoology at Museums Victoria



Mr Nate Byrne (MC), a meteorologist, science communicator and weather presenter on ABC News Breakfast.

Science at the Extreme included:

- The panel discussion, and showcase of Museum collections and PhD student work (open to the
- A pre-panel "thank you" event for our Science Week stakeholders

Extrasensory: 10 August

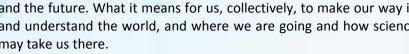




Held at Parliament House between 6PM and 10PM on Saturday 10 August 2019 in celebration of National Science Week, Extrasensory explored the future of human perception through interactive experiments, exhibits, talks and storytelling, and live magic, comedy and music performances.

Extrasensory, alongside the launch event at Melbourne Museum, represented the major Melbourne event presented by the Victorian Science Week Coordinating Committee for National Science Week 2019.

Extrasensory was built on two of humanity's main interests – ourselves, and the future. What it means for us, collectively, to make our way in and understand the world, and where we are going and how science may take us there.





- Seek knowledge in the music or stories presented, and conduct experiments for themselves and on themselves, to find the limits of their own perception and discover how these might be enhanced or augmented in the future.
- Consider how our senses work together to create our picture of the world, and how we are sometimes tricked by our senses so that this picture can in fact be quite different from reality.
- Contribute to scientific research to extend our understanding of human



sensory capacities and inform future developments in sensory technologies.

The event was ticketed (\$8 Concession, \$10 Full plus booking fee). Tickets were sold through Eventbrite prior to the event and were also available at the door on the evening. This enabled the Society to meet the catering costs for the event.

Activities were spread across 13 different spaces in the Parliament building. Staff and volunteers from collaborating institutions ran and supervised each activity.

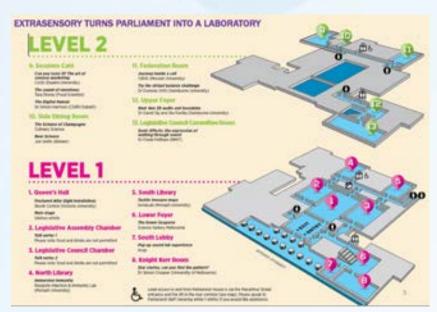
Attendees were given a program of the event and map of Parliament upon entry and were free to explore the event at their own pace in the order that they wished. Parliament and Science Week staff were on hand in each space to assist with wayfinding and answering questions about each of the activities.

Extrasensory brought together a diverse mix of people from community organisations, Universities, Victorian companies and startups, to local science communication and music talent to present the event.

Science Week volunteers and staff worked alongside Parliament of Victoria staff and volunteers in a partnership of good will and mutual curiosity to ensure a smooth bump in of activities and installation, and a vibrant, educational, and successful event was achieved.

The event attracted:

- 1004 event attendees
- Over 200 collaborators, staff, and volunteers (over 30 presenters)
- One international presenter (Dr Darlene Lim, NASA), and one interstate presenter (Dr Kate Selway, Macquarie University)



EXTRASENSORY PROGRAM ALL EVENING (6 PM - 10 PM) QUEEN'S HALL MAIN STAGE LEGISLATIVE ASSEMBLY CHAMBER orating beyond Earth; mission Plans Corriens Limits (NAVA) 6.20-6.40 pm Practured After (Sight Installs 6,30-6,50 pm emeg-lookle a celf 7:00-7:20 pm Artificial intelligence and the sense 6.60-7.00 pm Deceptology: the neuroscionce of magir 7.50-7.50 pm T06-730 pm Elephant frail far stories, can you find the purity Cherrietz / hasogenoon (Svillary ska 8.00-8.20 pm 7.20-7.40 pm it's petting dark - music of the Mars Boxes tul up sound lab experience E.30-8.50 pm 9.00-9.20 pm Neurobine the augmented human Dr Donkt Sky (Swinburne University) 8.20-8.40 pm LEGISLATIVE COUNCIL CHAMBER Immunity Section and immunity Lab (Human) University E.40-9.00 pm Deceptology: the neuroscience of magic 6,00-7,00 pm or you tasts 87 The art of sensory market 8.00-9.20 pm Elephant Trail viole Hollett (or 2:00-2:20 pm e sound of provinces Three (Food Scient) It's petting dark - music of the Mars & non sense and creativity he Smille Driversity of Helic 7.30-7.50 pm SIDE DINING ROOM 8.00-8.20 pm el: Efforts: the expression of walking through a Fram Futburn (RMT) program (ages 35+) 8.30-4.50 pm 1 16-7.35 pm 6.00-8.20 pm The achieve of chang 8.45-9.05 pm 8.30-9.50 pm The actioner of cha-



"It was an absolute pleasure to work with you and your team in staging Extrasensory at Parliament House. I enjoyed the experience thoroughly and I think our Parliament benefited significantly from the partnership with RSV and Science Week.

You helped to put us in such a good light and to draw many new visitors to our building. For that we are truly grateful.

The event was so enjoyable because of the diversity of exhibitors and performers you arranged and because of their immense enthusiasm. If you bottle that you have a new product that would become a best seller for sure!"

- Andres Lomp, Parliament of Victoria (pictured above at the Society's end of year function)

Given this was the first time that Science Week in Victoria has presented the main event on a Saturday evening, and also the first time that this event has included a ticket price, the quantity of collaborating partners and members of the public attending the event was impressive.

Science Week was also honoured to have Dr Tien Kieu MP attend and introduce one of the speakers (Dr Kate Selway) presenting in the Legislative Council Chamber.

239 event attendees took part in a survey upon exit, representing 24% of attendees. Of these, 62% were in the elusive 18 – 35 year old age bracket. Only 24% had attended a Science Week event before, 34% worked or studied in a science field, while 97% learned something new and 94% would recommend the event to friends. Most important for our partners, 99% of respondents reported they had never visited Parliament House before. An excellent outcome for all!

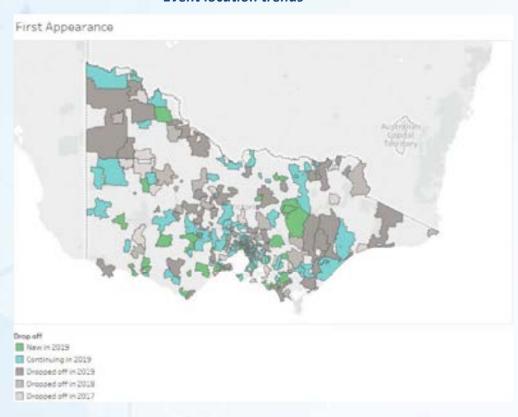
Grateful thanks to all our partners, speakers, volunteers and guests for making the night such a big success!

Statewide Program

A total of 434 events plus 27 competitions were registered in Victoria for National Science Week 2019. This represented an increase of 108 events compared with 2017 (total of 326 events) and held the increase gained in 2018 (435). Overall across the state, 54% of events were public with the remainder private.

Nationally, 2077 events were registered in 2019 (of which 21% were Victorian), compared with 2100 events in 2018 (again, 21% were Victorian).

Event location trends



Events across Victoria by postcode, 2017 - 2019

Most events were held in and around Melbourne and its suburbs. In regional Victoria 25 postcode regions have been engaged for the first time in 2019 since data collection began in 2016 – for example: Manangatang, Mansfield, Warburton, Smythesdale, Chesney Vale, Port Fairy, Winchelsea, Colac, Lavers Hill, Leongatha, and Wonthaggi. 20 newly engaged Melbourne suburbs for 2019 include: Somerville, Officer, Seaford, Doveton, Endeavour Hills, The Basin, Chirnside Park, Surrey Hills, Caufield, Avondale Heights, and Tootgarook. Examples of postcode regions that did not run an event for 2019 but did run one in 2018: Ouyen, Chewton, Yackandandah, Yarram, Meeniyan, Yaapeet, Nangiloc, Orbost, Creswick, Daylesford, and Kyabram.

Victorian Seed Grant Recipients



In 2019, the Victorian Science Week Committee awarded 6 community grants and 20 library grants for National Science Week. Sponsor, Cambridge University Press, provided funds for four school grants to be awarded to Victorian schools in addition to the ASTA School grant program for SciWk which is managed nationally.

This represented an additional 10 grants awarded to community compared with 2018. The amount of funds available per Community Seed Grant was increased from \$500 in 2018 to \$2000 in 2019 to attract higher quality applications and events, and in response to community feedback. This was effective, with applications to the grant scheme

increasing, and the funded events running interesting and quality events for their local communities. Activities funded ranged from science shows, hands-on science activities and workshops, exhibitions, public

lectures and panel discussions, citizen science, film screenings to live music performances. The topics presented covered a broad range of sciences, including space science, chemistry, biology, mathematics, robotics and coding, ecology, and sustainability.

The Vic Seed Grants prioritised regional events in an effort to lift support for regional engagement in SciWk. Funded events for each Vic Grant scheme are listed below.



Vic Seed Grants - Community

- Ballarat International Foto Biennale To the Moon and Back Public Program (activities to explore
 the past, present and future of space travel alongside a photo exhibition at the Ballarat Municipal
 Observatory)
- **Discovery Science and Technology Centre Bendigo** Fly to the Moon (activities, movie screenings, demonstrations, planetarium show)
- **Greta Valley Landcare Group** BLUE Community Screening (movie screening and activities to raise awareness about the issues facing our oceans, and tips to reduce plastic use)
- Southern Peninsula Concert Band Music of the Heavens (space themed music performed by the Concert Band, and astronomy presentations commemorating the 50th anniversary of the Apollo 11 moon landing)
- The University of Melbourne Stories from the cosmos: What Indigenous storytelling can teach us about memory, our highways and ourselves (panel discussion featuring a neuroscientist, writers, and an astronomer with expertise in Indigenous astronomical and geological knowledge)
- Wangaratta Community Toy Library Robot Kids Expo (interactive robotics and coding demonstrations and activities)

Vic Seed Grants - Libraries

- Moonee Valley Libraries STEM Fair
- Warragul, Leongatha, and Wonthaggi Libraries WGL Fizzics Liquid Nitrogen Shows

- Ballarat Library Destination Moon and Beyond Show
- Chiltern Library Frogs and Why We Need Them
- Ferntree Gully Library Family STEAM Day
- Deer Park Library Science Week at Deer Park Library
- **Doveton Library** World of Robotics with the Brainary
- Endeavour Hills and Pakenham Libraries Big Science Shows
- Corio and Leopold Libraries Learning how science works with Mighty Maggots!
- Cranbourne and Bunjil Place Libraries Fizzle and Pop Shows by TwistED Science
- Sunshine Library National Science Week at Sunshine Library
- Sydenham Library National Science Week at Sydenham Library
- Geelong West Library SEAing the Unseen': Microbial corrosion in the marine environment
- Coburg Library Curious Kids Night
- Creative Technology Hub, Hobsons Bay City Council Libraries Mini Maker Meet

Cambridge University Press School Grants

- Alice Miller School Re-vegetating the farm dams at school with native plants to stop erosion.
- Mentone Girls' Grammar Women in Science Breakfast featuring Merryn York, CEO of PowerLink and electrical engineer.
- Collingwood College Family Science Night catering for a range of language and cultural backgrounds.
- Rochester Secondary College Science Immersion Week. Rochester's year 10 students will engage the grade 6 students from local feeder primary schools in STEM-based activities.

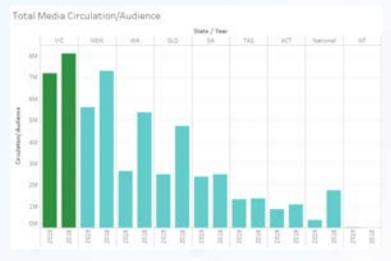
2019 Event Holder Survey

The total number of event attendees is estimated at 4,412 from survey responses.



The grants successfully supported new organisations (37%) in addition to repeat event holders (63%) to

present Science Week events in 2019. In future, focus will be placed on increasing the reach of Vic Seed Grant advertising to further encourage new organisations to apply for funding. 65% of the Vic grant supported events were fully booked, which is a good result indicating the events supported were popular and relevant to the community in which they were held (55% of events were fully booked in 2018). 47% of the events held received media attention, representing a 7% increase on 2018 efforts, reflecting the proactivity of the Vic publicist and the grant recipients in seeking media to publicise their events.



Victoria was again a standout for the national picture of National Science Week in terms of media impact, which was down across the nation, partly due to coinciding publicity surrounding the 50th anniversary of the Moon Landing and the marked decline in traditional media outlets.

Our particular gratitude is extended to the remarkable Dr Renee Beale for her exhaustive efforts and boundless enthusiasm for delivering science engagement programs to communities across our state over the course of 2018 and 2019. It has, at times, been a truly surreal journey. Thank you, Renee!

RSV Partner Programs

Our partnership work continued, in particular supporting the science stream of the ACU's **Kids' Conference**, the efforts of the **BrainSTEM** secondary school science mentorship program and the **Science for All** environmental DNA collection program.



At ABC Melbourne, from left: Jon Faine, Dr Renee Beale, Sigrid Thornton, Diesel

The Society also continued to support science engagement and literacy work through acting as an auspicor for unincorporated groups with aligned activities through grant management, or for aligned groups seeking philanthropic support for science engagement work that requires the RSV's DGR status. Auspicing is a valuable form of partnership that keeps the RSV engaged with and adding value to the broader Community of Practice through our networks and offering the expertise of our members. Our particular thanks are extended to the RSV's Business Manager, James McArthur, for taking up this extra work.

Cultural and Gender Diversity in STEM

The RSV was approached in 2018 by **Her Place Women's Museum Australia** to assist with gathering content for a new exhibition, featuring leading women in Science, Technology, Engineering and Mathematics (STEM). Through our work with the Victorian **Tech Schools Division** in the Department of Education, we brokered a partnership that has blossomed into a travelling exhibition that collects local STEM heroes to include with the show as it journeys around each of the ten Victorian Tech Schools. The Department has developed teaching resources and lesson plans to complement the exhibition, which made a particular splash in Bendigo during 2019, featuring four local STEM stars in the show.

VicPhysics Teachers' Network – Girls in Physics Breakfasts

We were delighted to support the VicPhysics Teachers' Network by auspicing a generous grant from the **Laby Foundation** in support of the Girls in Physics Breakfasts across metropolitan and regional Victoria over the course of 2019, while seeking support for the related mentorship scheme through our membership networks.



STEM Industry Development and Engagement

The BioMelbourne Network – "Progressing Innovation through Outstanding Leadership"

Our involvement with the BioMelbourne Network as a Community Partner continued in 2019 as we hosted a "BioBreakfast" for the biotech, medtech and pharmaceuticals sector addressing the collaboration with patients and colleagues that underpins commercial success. Held on the morning of 11 July, recipients of the 2019 Women in Leadership Awards reflected on how their work enables and progresses innovation in the healthcare sector, what's happening in Australia and beyond, and what their leadership journeys have been. Speakers included Dr **Anna Lavelle** (Chair, ANDHealth), Associate Professor **Clara Gaff** (Executive Director, Melbourne Genomics Health Alliance) and Dr **Evelyn Chan** (CEO, Smileyscope). As a community member of the Network, our members were entitled to membership rates to attend this dynamic gathering of commercial STEM enterprises and entrepreneurs.

STEM Media & Communications Training

Science in Public

One of the best ways to fulfil our brief in promoting science and scientific literacy is to facilitate better communication by scientists and science advocates. A productive relationship between scholars, journalists and media professionals can enable better public engagement with science, if we can better decode the interactions between scientists and the press. Through a series of "Media & Communication Training Workshops" hosted by the RSV throughout the year, the Science in Public team introduced scientists and science proponents to working journalists to talk about what makes science newsworthy in the mainstream media, how to distil your story to its essence through a pitch, understanding the different needs of different audiences, and training in presentation to camera and radio. Our support for the program enabled us to offer a limited number of free training places to our early career members.

STEM Literacy & Communication in Schools

Kids' Conference – Australian Catholic University

In 2019 the Society continued to auspice a STEM stream in the annual Kids' Conference hosted by the Australian Catholic University. Led by Stephen Spain through association with the History Teachers Association of Victoria, the Geography Teachers Association of Victoria and the Royal Society of Victoria, the Conference celebrated its sixth year of advancing student voice through new approaches to digital technology in the History, Geography, Science and English Classrooms.

Leader Teachers, Early Career Teachers, Pre-service Teachers and students were invited to register and attend sessions in this year's Kids' Conference, with pre-conference workshops held at the Society to prepare students for the task of communicating science projects to a conference audience.

A/Professor **Duane Hamacher** MRSV presented a keynote to the conference on cultural astronomy, exploring the intersection of traditional technical knowledge encoded in Indigenous cultures and modern science.

- Ms Pamela Borger, Chair

HONORARY TREASURER

Mr Andrew Davison

As Honorary Treasurer it is my duty to report to the Royal Society's membership on the financial activities and financial performance of the Royal Society over the last year. The auditor's statement and annual Financial Report, with extensive notes, are included with this RSV Annual Report.

I reported last year on our continuing operational deficits which arise from the Societies desire to deliver outcomes in line with our mission to promote science in Victoria. As the Annual Report has reflected, the good news is that we continue to gain considerable traction in political and community circles through our efforts to execute the "Inspiring Victoria" program, assist government to form scientific advisory panels and provide community briefings on important issues concerned with science. These impressive results notwithstanding, our bottom line continues to decline, in line with previous advice.

Science Program

Our financial decisions are predicated on the mission adopted by the Society at any given point in time, so I will commence by setting this context. The RSV Council has continued the three-year program, commenced at the end of 2018, aimed at ensuring that the role of the RSV in Victorian community is highly visible and relevant. Without such a program our purpose would be reduced largely to servicing members through our program of meetings in our CBD building.

These activities have built on RSV's reputation to position us as a highly relevant member of the Victorian scientific community, ensuring that our primary purpose extends beyond simply convening for the interest of our members. Without this reputation, it becomes difficult to attract funding through grants, external

benefactors and government agencies. Hence the focus given to our current program of works undertaken by the RSV staff under Council guidance.

Staffing

Both the Executive Committee and the RSV Council consider the level of staffing for the organisation on a regular basis. Over the last year we saw fit to increase staffing levels to support our extensive activities, as agreed in the previous financial year. In addition, we sought to engage the professional services of Science into Action and Deliberate Impact to assist us in developing a strategic vision for our future and help us to convene large forums with government. We will continue to monitor staffing levels to ensure we have adequate resources to acquit our program, and in 2020 have reduced our staffing.

Revenue

The RSV has limited sources of revenue, and the nature of these can be cause for confusion. In particular, it is important to note that while grants are considered revenue from an accounting perspective, they are not a useful form of revenue in their own right as they carry with them the responsibility to spend those funds in the process of executing the purpose of the grant. While it is true that these grants in fact cost the RSV money to service, they also serve our broader mission, and the exposure and good-will we generate is invaluable in our quest to identify benefactors and supporters within industry and government.

Overall, our revenue has grown by 16% on 2018 due entirely to the efforts of our staff over 2019. These are outlined in the Financial Report, but there are considerations that temper hopes for further growth.

Venue hire in particular continues to be profitable and in slow growth, rising 11% on last year. As a source of income this is important, however not scalable significantly above our current utilisation without further investment in facilities. We continue to lose business due to a lack of disability access to the auditorium and toilets, for example, and such facilities cannot be installed without losing rentable space within the building's current footprint, if indeed we had the funds to enable us to do so.

Membership is an interesting category to note as, despite suffering a 20% drop in members, revenue rose by 18%. This discrepancy is understood when you look at the average member age. We are failing to retain our youth membership (which carries a lower subscription fee) but have gained a smaller number of full fee-paying members. Again, this is not a good position for the sustainability of the organisation and finding ways to attract and retain younger members remains a key strategic concern.

The somewhat "opaque" category of **Other Revenues** is of interest this year as it includes a significant payment from Grocon for the professional services that have been engaged in pursuit of the "1 Victoria" initiative. As agreed, Grocon are providing a significant injection into the Society, specifically to cover our related professional service expenses, this year amounting to \$56,097.41.

The other component of this category is more interesting as it represents real potential for future revenues. This year we were paid to assemble a suitable panel of scientific experts to participate in a DELWP study, amounting to \$20,335.41. We hope that this is the start of many such engagements, and again is only possible through the hard work of our staff.

Revenue Category	Source	Amount (\$)
Donations & Bequests	Donors to the RSV, as canvassed at the start of this Annual Report	25,130.41
Grants	Inspiring Victoria: Federal Government	190,500.00
	Inspiring Victoria: Victorian Government	50,000.00
	Cambridge University Press: School Grants	2,000.00
	DELWP: Science for All Grant	30,727.27
	Hobson's Bay City Council: Strengthening STEM Program (CoderDojo Altona)	1,500.00

Revenue Category	Source	Amount (\$)
	Laby Foundation: Girls in Physics Breakfasts	22,727.27
	Wildlife & Welfare - Indigenous Animal Health Program	16,554.99
Grants (cont.)	Monash University: Joint Video Production	500.00
	Monash University: Let's Torque Grant	5,563.79
	TOTAL GRANTS:	320,073.32
Other Revenue	DELWP: Scientific Advisory Panel Recruitment Fee	20,335.66
	Grocon: Reimbursement of 1 Victoria Project Expenses	56,097.41
	TOTAL OTHER REVENUE:	76,433.07

Expenses

Over the past 12 months, our core operating expenses remained largely static on last year, despite the remuneration increases for staff approved last financial year and additional expenditure on consulting services for our strategic planning activities.

What has increased are our expenses related to the grants we are executing, and those related to the "1 Victoria" initiative (in this instance, professional services). In both cases these expenses are covered by the corresponding monies into the Society. Please refer to the table below for a better look at our expenses broken down.

Other notables include catering, which is a part of the packages we offer when hiring out the venue, as well as for our symposia and events. By and large this category of expense is covered by the corresponding incomings, however there are a small number of events where catering is a cost to the organisation without covering income (such as hosting dignitaries, special member gatherings and special events convened under grant conditions).

Expenditure Category	Activity	Amount (\$)
Advertising, Promotion and Website	Inspiring Victoria: Social Media & Radio Advertising Campaigns	14,202.46
	Inspiring Victoria: Science Week Publicist	9357.00
	Inspiring Victoria: Graphic Design	4828.31
	Inspiring Victoria: File Share	1268.31
	Inspiring Victoria: Photography	300.00
	TOTAL ADVERTISING, PROMOTION & WEBSITE:	29,956.08
Grants & Sponsorships	DELWP Science for All Grant Disbursements	2,762.82
	Hobson's Bay City Council: Strengthening STEM Program Disbursements (CoderDojo Altona)	4,026.44
	Laby Foundation: Girls in Physics Breakfasts Disbursements	5,662.74
	Wildlife & Welfare - Indigenous Animal Health Program	4,088.54
	Fungi for Land Disbursement	2,500.00
	Monash University: Let's Torque Grant Disbursement	5,522.67
	Science Teachers' Association Victoria – RSV Science Talent Search Sponsorship	2000.00
	RSV Subscription to 3CR Lost in Science	500.00

Expenditure Category	Activity	Amount (\$)
	Inspiring Victoria Grants	105,246.53
	TOTAL GRANTS & SPONSORSHIPS:	132,309.74
Printing, Publishing & Productions	Filming of RSV Lecture & National Science Week Events	23,802.21
	Proceedings: Editing, Publishing, Printing, Promotions	6,692.76
	Inspiring Victoria: STEM Activities for Libraries Brochure	5,441.42
100	RSV Newsletter	5,190.24
	RSV Library Materials in Storage	810.00
	TOTAL PRINTING, PUBLISHING & PRODUCTIONS:	41,819.12
Professional Services	Johnson Recruitment: Retention for DELWP Scientific Advisory Panel process	10,105.82
	Mon Jon Security – Site Patrols	3,017.30
	Planning Services: Inspiring Victoria, RSV	23,920.00
	Traditional Owners – RFA Briefings & Inspiring Victoria	4,536.25
	DELWP Science for All Grant – eDNA analysis by Enviro DNA	5,135.00
	1 Victoria Project Expenses	27,086.50
	Building Facility & Security Services	3,981.65
	Inspiring Victoria: Science Week Contractors	30,457.60
	Government House Event Design & Facilitation	5,000.00
	TOTAL PROFESSIONAL SERVICES:	110,222.00
"Other Expenses"	Accounting & Audit Expenses	10,452.37
	Honoraria	2,055.30
	Insurance	16,244.01
	Legal	226.00
	Postage & Courier	3,854.10
	Repairs & Maintenance	4,760.58
	Telephones & Internet	22,286.81
	Books & Subscriptions	2,288.35
	Bank Fees	3,648.41
	Travel & Accommodation	15,637.52
	Cost of Goods Sold	944.07
	TOTAL "OTHER EXPENSES"	82,397.52
"Occupancy Expense"	Cleaning	24,537.61
	Utilities & Rates	23,594.46
	TOTAL "OCCUPANCY EXPENSE":	48,132.07

Investment

As stated in my last report, the ability of the Society to operate in liquidity in recent years is largely due to an injection of funds known as the Royal Society of Victoria Science Foundation. This was most recently

augmented by a large bequest from Dr Phillip Law in 2011. The healthy size of the fund means that the RSV continues to be financially sound in the presence of ongoing operational deficits, and that the RSV has liquid assets to cover its immediate and medium-term requirements. The drawdown specified in the investment mandate allows for the proceeds of the fund to be used to support the Phillip Law Postdoctoral Award, RSV Research Medal, Young Scientist Research Prizes and sponsorship of the Science Talent Search, with a small amount allocated to offset the operating deficit.

The Foundation is managed by our portfolio managers Equity Trustees (EQT), and on their advice in the last year our investment portfolio has delivered 8% return on the final balance. This is on par with industry for our 70:30 Growth profile.

As a part of our continual portfolio review, we have divested several lower performing stocks as well as some which, while yielding returns via franking credits, were seen to be at odds with the ethical stance the RSV holds. These included shares that supported the gambling industry.

The gains not-withstanding, our expenses continued to exceed incomes this financial year (as anticipated in the last financial report), so it has been necessary to once again call on the investment mandate associated with the Science Foundation to support the continued operation of the Society. This is not a desirable event, and not one we can continue to rely on in perpetuity.

Considering current activities and the size and limitations of our current venue (with respect to its ability to generate revenue through hire), a vigorous replenishment of our Science Foundation is required. As reported last year this would need to be considerable (in the order of \$3.5-10M) to generate investment returns that would cover our expenses. In order to support our ultimate strategy for furthering science in Victoria, a figure of nearly \$30M would be required.

Planning for the future

At this stage we continue to forecast operating expenses in excess of revenues, and clearly this is not sustainable. At this time last year, I made the prediction that our funds would see us through another 5 years at our current rate. With the current global crisis and corresponding loss of both revenue and value in our investment portfolio, that number has fallen dramatically in 2020. Accordingly, we are now actively engaged in fundraising activities as befits a Tier 2 Australian charity with Deductible Gift Recipient (DGR) status, and I encourage all our members and friends to generously support these efforts.

Several options have been explored over this last year to alter this position, including utilising external venues for meetings on an ongoing basis. This plan, in particular, appears to have no benefit to the Society as (i) there is no ability for us to realise the listed value of the site and its chattels due to the conditions of the Crown Grant which we benefit from, and (ii) the use of any external venue will certainly result in a significant increase in the cost of running meetings, imposing a further drain on our Science Foundation for the foreseeable future.

Realistically we have two options on the table to move the RSV into a stable financial position, and these are essentially the same as those mentioned in last year's report.

- 1) That operating expenses be reduced to around \$50K p.a. This continues to be improbable and undesirable, as we could no longer maintain the mission of the RSV, instead reverting to a largely unoccupied and unmaintained building utilised only for our meetings. This "winding back" measure is essentially a position of last resort that can only be countenanced under our Crown Grant and Land Act as an ephemeral condition pending the anticipated influx of program funding.
- 2) That revenue be increased to approximately \$600K over today's income, either as a direct income stream or alternatively achieved by increasing the Science Foundation to \$10M via donations and bequests or some other mechanism.

Of those ideas brought before council to steady our financial position to date, the only realistic plan to achieve outcome 2) has been the development project. While we remain optimistic that the proposal will either itself generate the required injection of funding or trigger an alternative source of investment into the RSV, the timescale involved has become too long to ensure the Society's financial position is not

compromised. As such, we are approaching our MPs and senior bureaucrats in 2020 to discuss support and the potential for an enhanced role in relation to the Victorian public service.

Asset Register Review

It is here recorded that a review of the Society's assets recorded with the asset register was conducted by RSV Councillor Professor David Walker in December 2019 with the Society's Business Manager, James McArthur. Acquiring access to and reviewing the Society's extensive holdings in the State Library of Victoria was not a practicable exercise, however all items listed as located on site within the Society's building were suitably accounted for. My thanks to Professor Walker for undertaking the review.

Conclusion

In summary, the RSV continues to operate in a solvent manner, despite our challenges, and will continue to do so in the immediate future. However, in the absence of substantial government, philanthropic and sponsorship support, the year ahead may prove to be the last in which we can sustain our state-wide activities as the manager and grant recipient of the Inspiring Victoria program. This would undermine the standing that has been built in the community over recent years and jeopardise our future relevance and viability.

- Mr Andrew Davison, Honorary Treasurer