

The Royal Society of Victoria

Promoting science since 1854

# SCIENCE VICTORIA

NEWS FROM THE ROYAL SOCIETY OF VICTORIA

NOVEMBER 2021



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THE OFFICIAL  
NEWSLETTER OF

**RSV**

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## News and notices



## New RSV Members

### Dr Dinesh Raghu

RESEARCH FELLOW - OLIVIA NEWTON-  
JOHN CANCER RESEARCH INSTITUTE

### Ms Wani Walls

COO - ECO DETECTION

### Mr James Cutting

SENIOR LABORATORY TECHNICIAN -  
UNIVERSITY OF NEW ENGLAND

### Dr Robert Moore

CHIEF SCIENCE OFFICER -  
IAQ ANALYTICS

### Mr Richard Blundell

DIGITAL TRANSFORMATION CONSULTANT  
- PWC

### Professor Joanna Batstone

DIRECTOR, MONASH DATA FUTURES  
INSTITUTE

### Dr Anu Baburamani

RESEARCH ASSOCIATE, KING'S COLLEGE  
LONDON

Unless Members request a ballot, these will be considered by Council and, if elected, will be confirmed at the next Ordinary Meeting of the Royal Society of Victoria.



## Call for nominations: RSV Council election for 2022-2023

Nominations are hereby called for the election of the following positions for the 2022-23 Council:

### Five Ordinary Councillors

Up to five Ordinary Members of Council for 2022 and 2023 will be elected by postal ballot closing at 3.30pm on **1st March 2022**. The elected Councillors will take up office from the Annual General Meeting to be held in May 2022 - all current 2020-21 Councillors will continue until that date. All current 2021-22 Councillors and Office Bearers will continue until the AGM to be held in May 2023.

**Note:** *the following Ordinary Councillors are eligible and required to re-nominate to continue on Council: Dr Sophia Frentz, Dr Jane Canestra, Dr Kevin Orrman-Rossiter*

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

**Note:** *In 2022-23 the Special Positions will be the Chairs of the following Council Committees: Membership & Mentoring; Publications, Collections & Records; Science Program; Science Outreach & Partnerships; Science Policy & Advocacy.*

**Note:** *The Returning Officer for the 2022-23 RSV Council Election will be Dr William Birch AM (Deputy: Dr Thomas Darragh FRSV),*

The Nomination Form is distributed at the end of this edition of Science Victoria. It must be returned, attention to the Returning Officer, along with the nominee's 200 word statement by **3.30 pm, Monday, 20th December 2021**.



## SCIENCE VICTORIA

Monthly newsletter of the RSV

THE ROYAL SOCIETY OF VICTORIA INC.  
The Royal Society of Victoria  
8 La Trobe Street,  
Melbourne, Victoria 3000

EMAIL: [rsv@rsv.org.au](mailto:rsv@rsv.org.au)



## Notice: The RSV has changed its membership structure

Until the end of October 2021, we had maintained a range of different membership types for many years: full, retired, rural/interstate, emeritus, family and student memberships, all associated with different fees ranging from \$200 to \$42 annually.



### TWO MAIN MEMBERSHIP CATEGORIES.

We now maintain two forms of annualised membership: **Full Membership**, and **Student Membership**.

Full Membership applies to all people of working age, while Student Membership applies exclusively to people enrolled full time at a Victorian education institution.

All members who were formerly Retired, Emeritus, Family or Rural/Interstate members are now simply Full Members of the Society.

Student Members are no longer "associate members," and now enjoy the same privileges, rights and responsibilities as Full Members; importantly, this means our Student Members are entitled to vote, run

for office and help determine the future directions of the Society alongside our Full Members.

Our Life Members and Fellows will continue as they are.

## REDUCED MEMBERSHIP FEES

Science is for everyone. We aim to elevate the Victorian community's regard for science and promote awareness and utility of scientific work. While we are proud of our distinguished history and celebrate the achievements of our finest scholars, we seek to benefit from a diverse membership and to combat any perception that we are an elitist or exclusive organisation.

To reduce barriers to membership, the Council has decided to reduce our annual rates. **Full Membership** was previously \$200/year - **it is now \$120/year**, representing a beneficial reduction on even the lowest annual rate of \$130 for (formerly) Emeritus members. No existing member will miss out on a fee reduction.

The fee for **Student Membership** has only a small reduction, from \$42 to **\$40/year**, recognising this is now a full membership as described above.



## I'M A CURRENT MEMBER. WHAT DO I HAVE TO DO EXACTLY?

Nothing different. Your membership will renew over the course of the next year at the new, lower rates - you don't need to do anything new. Whether you've set your subscription to renew automatically, or prefer to renew manually each year, you'll receive the various system-generated emails from our membership database alerting you to any upcoming transactions, as per normal.

You can check the new categories, login to your existing membership profile and refer any colleagues, friends and family members interested in joining us at <https://rsv.org.au/how-to-join/>.

## HAPPY TO HELP.

If you have any worries or queries, let us know by email ([rsv@rsv.org.au](mailto:rsv@rsv.org.au)) and we'll attend to you at our earliest opportunity. Email is best, as we're not physically in the RSV building most days during the COVID restrictions to answer the phone (fingers crossed for next year).



## Sea Country Indigenous Protected Areas Grant

This grant opportunity seeks to increase the area of sea in Indigenous Protected Areas (IPAs) to strengthen the conservation and protection of the marine environment, while creating employment and economic opportunities for Indigenous Australians, particularly in remote regions. This will be achieved by developing new Sea Country IPAs and/or expanding the area of sea in existing dedicated IPAs. The program builds on the success of the existing Indigenous Protected Areas Program.

The grant opportunity is part of the Sea Country IPA Program. The objectives of the program are:

- Protect, conserve and improve the condition of Australia's marine environment and augment Australia's National Representative System of Marine Protected Areas
- Assist Indigenous Australians to deliver environmental, cultural, social and economic outcomes through enhancing the capacity of Traditional Owners to effectively and sustainably manage their land and sea.
- Enhance collaboration between Indigenous Australians, government and non-government stakeholders to support the conservation and sustainable management of Australia's marine environment.

### Close date:

29 Nov 2021 05:00 PM AEDT

### Total Amount Available

(AUD): \$9,700,000.00

### Estimated Grant Value (AUD):

From \$800,000.00 to \$1,300,000.00



Australian Government  
Department of Agriculture,  
Water and the Environment



Australian Government  
National Indigenous  
Australians Agency

### Eligibility:

To be eligible you must:

- be an Indigenous organisation or an Indigenous enterprise as defined in section 14 Glossary of the grant opportunity guidelines. If you do not have an Indigenous Corporation Number (ICN), you may provide a statutory declaration stating that your organisation is at least 51 per cent owned or controlled by Indigenous persons or the Indigenous enterprise has 50 per cent Indigenous ownership
- have an Australian Business Number (ABN)
- have an account with an Australian financial institution and be one of the following entity types:
  - an entity, incorporated in Australia
  - a company incorporated in Australia under the Corporations Act 2001
  - an Indigenous not-for-profit corporation, council or incorporated association
  - an incorporated trustee on behalf of a trust
  - an incorporated association
  - an incorporated co-operative
  - a registered charity or not-for-profit organisation. an Indigenous government agency or body established under Commonwealth, state or territory legislation
  - an Aboriginal and/or Torres Strait Islander Corporation registered under the Corporations (Aboriginal and /or Torres Strait Islander) Act 2006.

Your application must include a letter of support from an entity or entities with responsibility for representing Traditional Owners of your proposed IPA consultation area. The letter should provide support for you undertaking consultation and planning activities consistent with the consultation stage of an IPA project.

### To find out more about the grants and apply visit:

<https://www.grants.gov.au/Go/Show?GoUuid=fe375811-d6aa-473a-addc-582cc15bc51f>



## Environment Restoration Fund – Threatened Species Strategy Action Plan – Priority Species Grants

This grant program provides funding to undertake activities that will protect, enhance, rehabilitate, recover and/or restore priority species and their habitats.

### Open date:

01 Nov 2021 09:00 AM AEDT.

### Close date:

13 Dec 2021 05:00 PM AEDT.

### What do you get?

\$50,000 to \$250,000 covering up to 100% of eligible project expenditure.

### Who is this for?

Organisations with on-ground activities that assist efforts to improve the trajectories of priority species.

### Overview

The program reflects the Government's efforts to protect and restore Australia's threatened species through the **Threatened Species Strategy's first Action Plan 2021 – 2026**.

The objective of this program is to assist efforts to improve the trajectories of priority species which are identified in the grant opportunity guidelines.

You must complete your project by 31 March 2023.

### Eligibility:

You can apply if you:

- are an eligible entity
- have an eligible activity
- have eligible expenditure.

**To find out more about the grants and apply visit:**

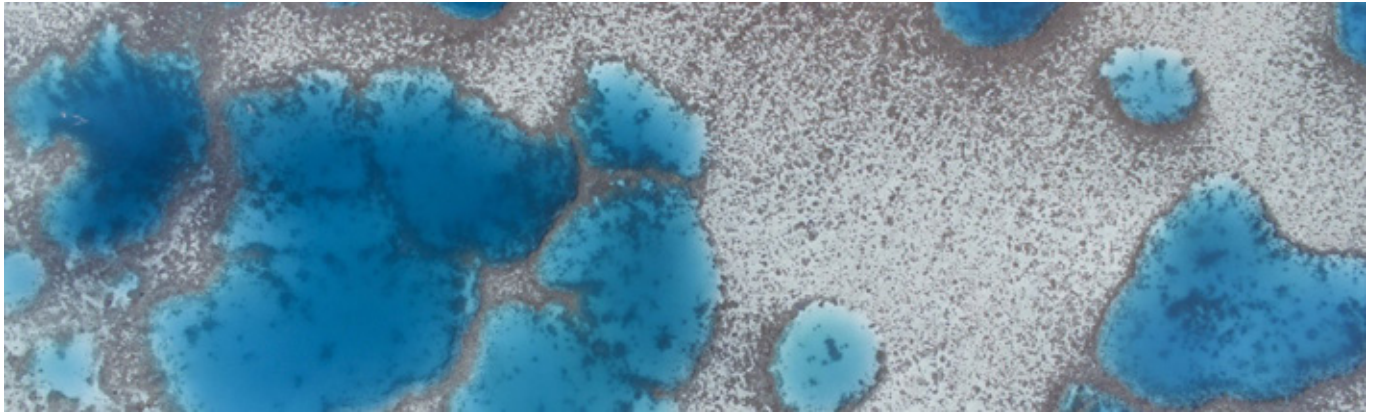
[www.business.gov.au/erfps](http://www.business.gov.au/erfps)

**Further information on the national 100 Priority Threatened Plants and Animal Species can be found here:**

[www.awe.gov.au/environment/biodiversity/threatened/publications/strategy-home](http://www.awe.gov.au/environment/biodiversity/threatened/publications/strategy-home)



**Australian Government**  
Department of Agriculture,  
Water and the Environment



## Our Marine Parks Grants - Round 3

The Australian Government is inviting applications in an open process to the third round of Our Marine Parks Grants. This grant opportunity is part of the Australian Government's \$39.9 million investment in Australian Marine Park partnerships and forms part of the broader \$100 million Ocean Leadership Package announced in April 2021.

### Close date:

16 Dec 2021 09:00 PM AEDT



**Australian Government**  
Department of Agriculture,  
Water and the Environment

The Our Marine Parks Round 3 grant opportunity seeks to support achievement of Australian Marine Park objectives:

- a. the protection and conservation of biodiversity and other natural, cultural and heritage values of marine parks in the Australian Marine Park Network
- b. ecologically sustainable use and enjoyment of the natural resources within marine parks in the Australian Marine Park Network, where this is consistent with objective (a),

Including through projects which aim to:

- improve capacity of regional and Indigenous communities to deliver outcomes that support ongoing management and health of Australian Marine Parks.
- develop tourism operator capability to deliver environmentally and culturally appropriate, high-quality recreation and tourism experiences in or associated with Australian Marine Parks, contributing to Australia's visitor economy.

- improve ecosystem health and understanding of marine park values and the pressures impacting on them, including, but not limited to, projects with the recreational and commercial fishing sectors and the seafood industry.

### Eligibility:

To be eligible you must be one of the following entity types:

- Indigenous Corporation
- Company
- Corporate State or Territory Entity
- Non-corporate State or Territory Statutory Authority
- Local Government
- Cooperative
- Incorporated Association
- Statutory Entity

### To find out more about the grants and apply visit:

<https://www.communitygrants.gov.au/grants/our-marine-parks-grants-round3>

Events for the month

# Bio-remediation: Restoring contaminated Ecosystems, naturally

Thu, 9 Dec 2021

6:30 PM - 8:00 PM

1 x General Registration  
A\$6.36 incl. A\$1.36 Fee & Tax

SALES END ON 9 DEC 2021 GENERAL  
ADMISSION FOR NON-MEMBERS

Nature-harnessing technologies are key to effectively and sustainably restoring contaminated ecosystems, using naturally occurring microorganisms to clean up contamination from oil and other organic pollutants in soils, groundwater and water bodies. The bioremediation process both destroys contaminants and restores an ecosystem's microbiome.

But every local ecosystem is unique when it comes to microbiological communities, so new and innovative approaches are required for each contaminated site.

Understanding the factors that determine the stability and resilience of contaminated ecosystems, and the critical role of that system's natural microbial community, remains one of the frontiers of environmental science. Join Professor Andy Ball to explore how environmental microbiology can be scaled up for impactful and commercially successful applications to contaminated sites all over our highly industrialised world.



### About the Speaker

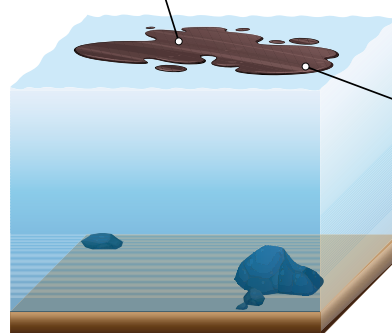
Professor Andrew Ball is the Director of the ARC Training Centre for the Transformation of Australia's Biosolids Resource at RMIT University. With deep expertise in environmental microbiology and biotechnology, Professor Ball was, until recently, the Director of the Centre for Environmental Sustainability and Remediation (EnSuRe) at RMIT.

Andy has headed the Environmental Biotechnology Group, now based at RMIT University (previously based at Essex University and Flinders University), since 1995. He has brought a wealth of research and teaching expertise to Victoria at

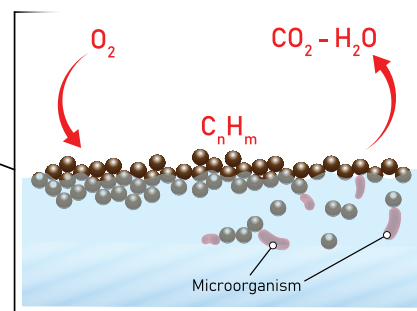


# BIOREMEDIATION

- SOURCES**
- Natural oil seeps
  - Transportation - accidental spills
  - Extraction of petroleum
  - Runoff from land sources
  - Jettisoned fuel



Marine **micro-organisms (bacteria-algae)** break apart the spilled oil (mixture of various hydrocarbons) with the help of enzymes and oxygen, letting off carbon dioxide and water.

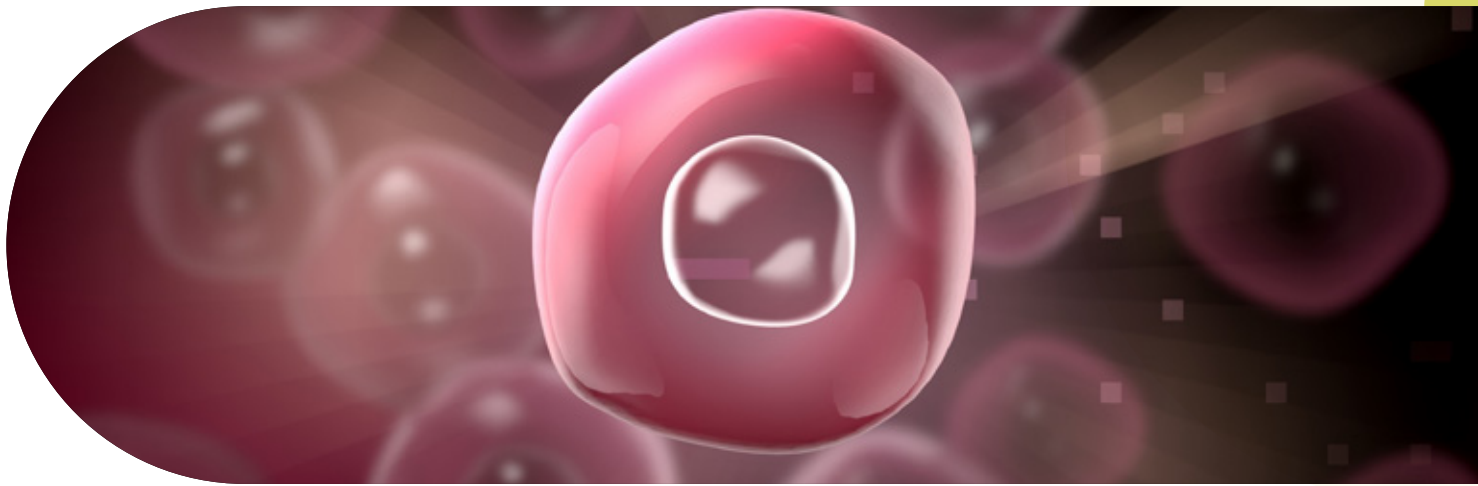


Adding **fertilizer** increases the size and number of the microbes so they can eat more oil.

an international level, particularly in the fields of bioremediation, organic waste treatment, and the environmental fate of organic pollutants. His contributions to his field and to the research community in Victoria were recognised this year with the award of the Royal Society of Victoria's Medal for Excellence in Scientific Research in Category I: Biological Sciences.

**Tickets are available [here](#) to participate in the webinar via Zoom and/or Eventbrite. RSV Members are prompted to enter their promotional code to access a member's ticket. Alternatively, you can watch along via Facebook Live at the appointed time without buying a ticket.**





## Improving Drug Discovery: A Molecular Understanding of Cell Surface Receptors

Thu, 25 Nov 2021

6:30 PM - 8:00 PM

1 x General Registration

A\$6.36 incl. A\$1.36 Fee & Tax

SALES END ON 25 NOV 2021

GENERAL ADMISSION FOR NON-MEMBERS

The human animal is multicellular – an organism comprised of trillions of smaller organisms. As with any complex organisation, each individual cell in our body must communicate with and respond effectively to the collective to keep our systems working. Our cells send and receive signals through the use of special proteins on their surfaces – **receptors** – that interact with the “extracellular matrix,” a network of specialised molecules that perform structural, biochemical and signalling functions between our bodies’ cells and systems.

The largest family of these cell-surface receptor proteins are called G Protein-Coupled Receptors, or GPCRs. GPCRs respond to extracellular stimuli such as hormones, neurotransmitters, peptides, metabolites and odours, while controlling a variety of physiological functions. Importantly, they have been found to have an excellent response as drug

targets and are thus very useful in developing effective medicines to combat serious disease. Currently, GPCR targets are implicated in around 25% of all medicines approved by the USA’s Food and Drug Administration.

However, many hurdles remain to improving GPCR drug discovery, requiring an expanded, interdisciplinary approach to open the door to new therapies. Join **Dr Christopher Draper-Joyce** to explore new, proof-of-concept approaches that promise the development of safer and much improved options for GPCR therapeutics.

### About the Speaker



Dr Christopher Draper-Joyce is an ARC DECRA Fellow with the Florey Institute of Neuroscience and Mental Health and a Lecturer on Drug Discovery with the University of Melbourne’s Faculty of Medicine, Dentistry and Health Sciences. He was previously a Postdoctoral Fellow at the Monash Institute of Pharmaceutical Sciences, where he earlier completed his PhD on the biomolecular actions

of the dopamine D2 receptor using pharmacological assays, molecular biology and biochemistry techniques.

Christopher’s postdoctoral work has extended his analytical and molecular pharmacology skillset into the field of structural biology, with a particular focus on solving and stabilising the GPCR-G protein complexes, to shed new light on molecular mechanisms of drug-receptor action. He has contributed to the pandemic effort with colleagues at the Florey, bringing the Institute’s collective skillset in protein engineering to bear on SARS-CoV-2, developing novel lead proteins that can bind to the S glycoprotein (Spike) of the virus, and may be useful as antiviral agents.

Dr Draper-Joyce’s efforts have been recognised with an ARC Discovery Early Career Researcher Award and the Asia-Pacific Protein Association Young Scientist Award in 2020 and, in 2021, he is the recipient of the Royal Society of Victoria’s Phillip Law Postdoctoral Award in Category II: Biomedical and Health Sciences.

Tickets are available [here](#) to participate in the webinar via Zoom and/or Eventbrite. RSV Members are prompted to enter their promotional code to access a member’s ticket. Alternatively, you can watch along via [Facebook Live](#) at the appointed time without buying a ticket.



## Gardens' prolific and eccentric first Director, Baron Ferdinand von Mueller, returns to tell his tale

Royal Botanic Gardens Victoria releases entertaining free narrative audio tour starring Gardens' first director

### Event details:

MELBOURNE GARDENS, STARTS OUTSIDE GATE F  
SCAN THE QR CODE AT THE GATE TO ACCESS THE  
AUDIO FILE AND ROUTE MAP

Daily, anytime from August 6, 2021

FREE

APPROX. 50 MINUTES

PLEASE BRING YOUR SMARTPHONE AND HEADPHONES

Commissioned by Royal Botanic Gardens Victoria in celebration of its 175th milestone year.

This year, visitors can journey through Melbourne's beloved Royal Botanic Gardens Victoria under the audio guidance of Baron Ferdinand von Mueller – eccentric outsider, global scientific powerhouse and the Gardens' first director from 1857-1873 – as he time travels into present-day Melbourne Gardens in the audio tour, **Flora and the Baron**.

With a smartphone and headphones, visitors can scan a QR code and stream the **free** 50-minute audio tour at any time during Gardens opening hours. It is based on the first director's prolific writing, created by Bowerbird Theatre and performed by actor Brian Lipson.

"The tour is a fantastic way to spend more time

in nature, discover the Gardens' history, and be entertained," says Tim Entwisle, Director and Chief Executive.

Cut off from his beloved Gardens for the last twenty years of his life in self-imposed exile, the Baron returns to delight in the beauty of the plants, revel in his scientific legacy, and entertain us with stories from his remarkable life.

"The audience grows to love his humour, warmth, eccentric charm, and sympathise with his sorrows. I felt as though I were walking through the Gardens with a friend," says Tim.

The Baron's controversial dismissal as director of the Gardens in 1873, which made headlines at the time and was the subject of fierce debates in Parliament, and his subsequent refusal to ever set foot in the Gardens again, are much documented.

In the tour, he reveals the joys, sorrows and challenges: his childlike delight in discovery, and the punishing endurance in the field of a man obsessed.

His much-publicised failure to marry, which stands in stark contrast to his enduring love of our native flora is also explored.

Appointed Victoria's first Government Botanist in 1853, Mueller established the National Herbarium of Victoria that same year. From then until his retirement in 1896, he built the foundations of what is today one of Australia's most important dried plant, algae and fungi collections – the State Botanical Collection, recognised

internationally as an important resource for scientists, researchers and more.

Although he did much to encourage the productive use of native flora, he is forced to confront the environmental havoc produced from his own actions, such as introducing blackberries, and the larger, lasting impact of colonisation. He challenges us to avoid the mistakes of the colonial scientific era.

Visitors will pass by the Herbarium, Fallen Oak, Perennial Border, Sensory Garden, Fern Gully and other locations during the tour.

For those unable to visit the Gardens, the work can be listened to online at [rbg.vic.gov.au/melbourne-gardens/flora-and-the-baron/](https://rbg.vic.gov.au/melbourne-gardens/flora-and-the-baron/)

## ABOUT BOWERBIRD THEATRE

Bowerbird Theatre uses physical storytelling, live music, state-of-the-art audiovisual effects, stunning design and archival resources to create exciting performances that challenge, entertain and move our audiences. Their first production, *Deceptive Threads*, was awarded

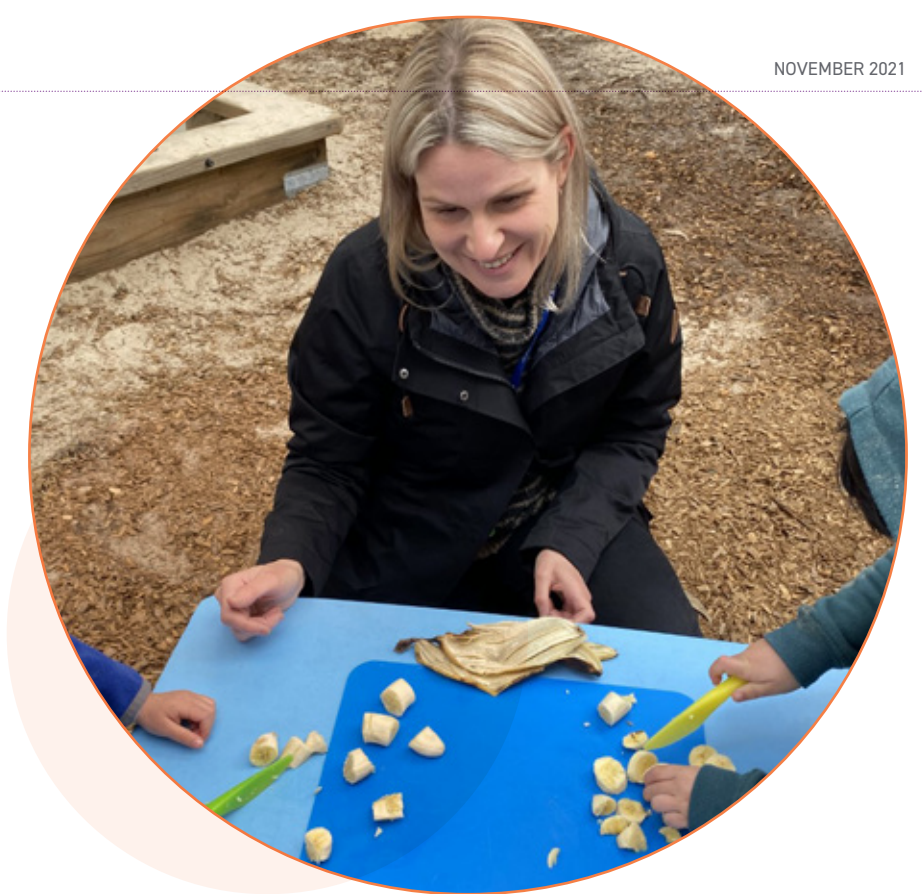
the Khayrallah International Art Prize (NC State University) and the Philip Parson Prize (ADSA) and garnered excellent reviews over three Melbourne seasons.

Established in 2015, Bowerbird is David Joseph and Karen Berger, who have between them over fifty years experience in the performing arts sector. Collaborating with outstanding video artists, lighting, set and costume designers, their work strives to reach new levels of sophistication, telling stories of our time. Karen and David share a love of story, song, rhythm and dance and have performed and taught in a wide range of disciplines and contexts. Their decades of practical experience have been augmented with academic study and their passion for and knowledge of the performing arts continues to deepen.

The *Flora and the Baron* free guided audio tour was launched for National Science Week in August and is available for the remainder of the year. Visit the Royal Botanic Gardens Victoria website for more details or to listen to the tour online.

**For more information see**

<https://www.bowerbirdtheatre.com/>



## SCIENCE WEEK SEED GRANTS

National Science Week Victoria again offers a *Seed Grant* scheme of amounts up to \$1000 excluding GST to assist libraries, organisations and individuals who would like to present a public event during National Science Week, August 2022. Applications will open 1 December 2021 and close on Friday 11 February 2022 12noon. Get your ideas ready and submit them from 1 December.



## Victorian Science Week Report 2021

In a fresh beginning, 2021 has been a year of opportunity, collaboration and new partnerships for Inspiring Victoria and National Science Week in our state. Building upon our regional engagement through broadcast and online content in 2021, we moved to a new model of partnership programming with our state's most loved and trusted cultural institutions and reputable organisations. These partners each have proven community engagement outcomes and unique audience following while sharing the values of National Science Week.

2021 also saw Inspiring Victoria again deliver a significant community grants program for science week with a **small grant funding to 12 libraries and independent organisations, 37 schools and for the first time welcomed 20 Neighbourhood Houses** to participate in self organising events and activities for their local communities.

The online platforms levelled access for rural, regional and metropolitan audiences, and we saw a far greater participation by regional and interstate audiences in particular; just one of the welcome results of trying something different out of sheer necessity in another unique year.



Overwhelmingly our State-wide survey feedback told us that the digital and online delivery of programming and events this year enabled a significantly greater audience diversity to join in Science Week activities. The online platforms levelled access for rural, regional and metropolitan audiences, and we saw a far greater participation by regional and interstate audiences in particular; just one of the welcome results of trying something different out of sheer necessity in another unique year. In future years we will continue to be advocating for an accessible digital and online delivery model to accompany our physical events for Science Week to keep broadening opportunities for diverse audience participation.

I would like to thank our team here at the Royal Society of Victoria and our many volunteer Councillors and Committees, particularly the

Victorian National Science Week Committee and Inspiring Victoria Board, for a fantastic effort to govern this year's National Science Week. I wish to thank each of the cultural institutions and organisations who made the main event program possible - **Museums Victoria, Royal Botanical Gardens Victoria, Zoos Victoria, Public Libraries Victoria, Parliament of Victoria, State Library of Victoria, Philip Island Nature Reserve, Neighbourhood Houses Victoria and Royal Society of Victoria** and the many volunteers and community groups who deliver their unique community focused events, activities and workshops across regional Victoria.

Our aim is to continue playing a catalyst role to build upon these partnerships, facilitate new connections and opportunities for them through the annual Inspiring Victoria program and support the



building of a science literacy and engagement eco-system through strategic collaboration, ensuring we keep our commitment that 'Science is for everyone'. Take a look at some of the images and outcomes of this year's Science Week in Victoria.

Our aim is to continue playing a catalyst role to build upon these partnerships, facilitate new connections and opportunities for them through the annual Inspiring Victoria program and support the building of a science literacy and engagement eco-system through strategic collaboration, ensuring we keep our commitment that 'Science is for everyone'. Take a look at some of the images of this year's Science Week in Victoria.

***Our full report on National Science Week in Victoria is now available from the [RSV's website](#).***

**Rena Singh, Manager Inspiring Victoria.**





## Where does your food come from? Will it always be there?

THIS ARTICLE FOLLOWS A PRESENTATION TO THE ROYAL SOCIETY OF VICTORIA ON 23RD OF SEPTEMBER 2021 TITLED "FOODPRINT MELBOURNE: BUILDING THE RESILIENCE OF MELBOURNE'S FOOD SYSTEM", DELIVERED BY DR RACHEL CAREY (THE UNIVERSITY OF MELBOURNE).

Last year, we had a wakeup call. The 2019-2020 bushfires and pandemic that quickly followed exposed the cracks in our food supply systems.

More Australians experienced food insecurity in the past year than ever. Crops, livestock, and produce were lost – or simply could not get to us. Dr Rachel Carey wants to make our food supply chain much more resilient to future shocks and stresses.

We tend to think of our cities as food secure. Across the nation, we produce enough food to support 60,000,000 people – more than double the population (albeit a large portion is exported). But in the last 18 months, we have seen supermarket shelves barely stocked, farmers leaving their produce rotting in fields or dumped, and students queuing for food vouchers and parcels.

The COVID-19 pandemic disrupted

the supply chain in several ways. It shut down major cities, and state and international borders, caused labour shortages on farms and processing centres, increased waste of farm produce with the shutdown of the hospitality sector, and created surges of consumer demand.

Rachel leads the *Foodprint Melbourne project*, which investigates the resilience of Melbourne's food system. The pandemic exacerbated weaknesses that were already there due to a changing climate: more frequent and severe fire, drought, and floods. She now wants to leverage lessons learned over the past two years to transform our food systems.

All Australian state capitals have city foodbowls – city-fringe farmland – that are a vital source of fresh food. But as our cities rapidly grow, their foodbowls are under threat as farmland is cleared to make room for more houses.

Urban sprawl encroaching into the fields that supply our food will mean that we might struggle to feed the growing population. Melbourne's dwindling foodbowl currently grows enough food to meet around 41% of the Greater Melbourne population's overall food needs – but how do we get that 60% more?

Urban farming is one solution. There are many green spaces in the city, including parks, median strips, golf courses, and rooftops, that we could be utilising to grow edible produce. CERES, a non-for-profit community-run environment park and farm, saw a high demand for its food boxes as lockdowns forced people to shop more locally than ever before. On a 250 m<sup>2</sup> patch in the inner city, urban farmers grew a multitude of fruit and vegetables for nearby residents.



In the heart of Brunswick, CERES is a great example of how we can use our green spaces for urban farming.

Rachel advocates for cities to increase their urban farming capacity as an “insurance policy” in the event of natural disasters or pandemics. Local food production, while not sufficient to be our only food source, can be a buffer against future shocks that disrupt supply chains to fill the gaps.



We can also rethink how we deal with waste to create circular economies. Cities have access to waste streams that can be reused

within the system. Food waste, for example, could be converted into compost so that nutrients in organic waste are returned to the soil. City wastewater can provide a relatively secure source of water for food production in a drying climate. There is also a financial benefit to the closed loop: keeping money circulating within our own economy when we purchase food from local farmers and suppliers and give resources back to them.

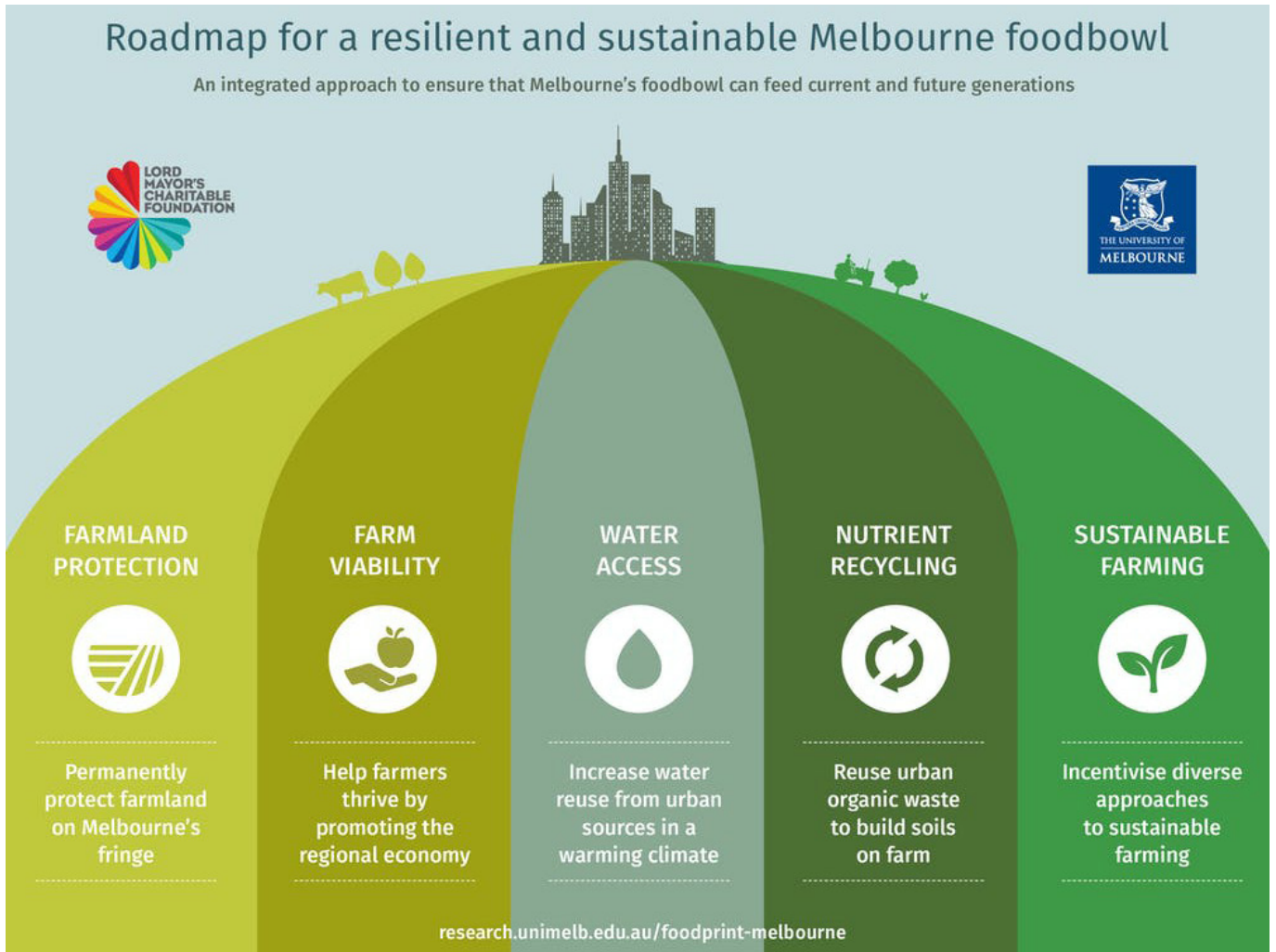
In the case of disruptions, Rachel believes the system must be more adaptive and innovative. Drastically reduced workforces due to social distancing measures meant that even if food was harvested, it was not being properly sorted and distributed. We could pop up more local food distribution centres, have online farmers markets to provide farmers a platform to directly sell produce to consumers, and encourage people to work

at different times. Rachel’s team has many ideas waiting to be put into action.

We similarly need greater diversity within the system. In addition to a variation of scale – from urban plots and small community gardens to large enterprises – we also need geographic diversity in the locations of our food source in the case of rerouting like with bushfires. Farmers should also vary their types of crops and livestock so that there is also a backup if one is impacted.

If your pantry and fridge stocks remained unscathed in the past 18 months, then perhaps you are among the more fortunate. One of the biggest victims of supply shocks is not the food quantity, but the equity of food distribution.

Supply disruptions can lead to spikes in food prices. When this happens, people on low incomes



A roadmap created by Foodprint Melbourne outlining steps towards a resilient and sustainable Melbourne foodbowl.

and those already food insecure are most affected. Many people have been worried about how they will afford to eat if/when they lose their jobs or how they will get food during self-isolation. Importantly, an increasing number of people are unable to afford enough nutritious food.

As it is, fewer than 5% of Australian adults eat the recommended number of vegetable servings daily. If everyone did, we would not have enough. Foodprint Melbourne therefore aims to increase equitable access to fresh, healthy foods and promote sustainable production for current and future generations of Australians.

Based at the University of Melbourne's Faculty of Veterinary and Agricultural Sciences, Rachel's team works with a range of stakeholders to ensure that their research has impact. The team is planning interventions and collaborating with local councils and management bodies to enact cross-sector and collaborative approaches to food policy.

An equitable, food secure future is possible. By strengthening local and regional food supply chains, maintaining city-fringe farming lands and developing urban farming approaches, creating circular food economies to minimise waste, and adopting greater flexibility, we can build a resilient system. Rachel is paving the way forward now to ensure access to food for generations to come.







# Bringing the Eastern Barred Bandicoots Back

THIS ARTICLE FOLLOWS A PRESENTATION TO THE ROYAL SOCIETY OF VICTORIA ON 16TH SEPTEMBER 2021 TITLED "FROM DUMP TO PARADISE: SAVING THE EASTERN BARRED BANDICOOT FROM EXTINCTION" DELIVERED BY DR AMY COETSEE (ZOOS VICTORIA). ALL IMAGES USED HERE WERE CAPTURED DURING HER PRESENTATION.

Australia's biodiversity is declining. Around 100 endemic Australian species have been listed extinct – not even counting invertebrates, which would increase the number 10-fold. A further 1,700 plant and animal species are currently threatened. Because no species works in isolation, entire ecosystems are at risk. We have much work to do to save our species.

Threatened Species Biologist, Dr Amy Coetsee, works tirelessly to save one species in particular: the Eastern Barred Bandicoot (EBB). As a child in the UK, she dreamed of a career in conservation and so went to Aberdeen University to study octopus behaviour. Unfortunately, the octopuses she was working with died. Since then, she has fought to keep animals alive – she came to Australia to study EBB reintroduction biology for her PhD. Now she fights the extinction of some of Victoria's most endangered species at Zoos Victoria.

The home of the EBB once stretched from Melbourne to the South Australian border. In the 1970's, the population dropped to around 1000, then within a decade, there were only 150 left. The last refuge of the EBBs was in Hamilton – one of the last places they could be found in the wild. In

1988, the EBB Recovery Team was formed to respond to the continued population decline, and they had to act quickly.

Bandicoots were collected for a captive breeding program. Despite the team's efforts, the species was declared Extinct in the Wild on the mainland in 2013. But in a story of hope, they have since been reclassified from Extinct in the Wild to Endangered thanks to the efforts of Amy and others.

In 1991, the Bandicoots were moved to Zoos Victoria to breed enough for release back into the wild. But as populations were released, they relied heavily on fox control for continued survival. 'We can't maintain a population where foxes are,' says Amy.





A map of release locations – black stars represent unfenced sites (where the bandicoots did not last long) and purple stars represent fenced sites.

Originally, three release sites spanning 740 hectares were fenced off to protect from foxes. But fences are costly. To build, maintain, and constantly monitor as they require daily checks for any weak points. The team therefore turned to fox-free islands instead.

Amy proposed a release of EBBs on French Island, Victoria’s largest coastal island, to the locals. She initially faced some resistance as they were concerned that it might change the way they have to manage the land or that bandicoots might become overabundant and cause damage (especially given that koalas had previously caused damage in the area by overgrazing trees).

The EBB Recovery Team first did a trial release of 20 bandicoots on Churchill Island. Its small size meant that the bandicoot population quickly filled the space and there are now 110-120 at any one time. With the island being an even split of farm and bush land like French Island, it was the perfect model for people to see the impacts of bandicoots on the land.

Bandicoots adopted the role of ‘ecosystem engineers’ on the island, digging approximately 13 kg of soil per night to help with turnover. Loosening the soil increases water filtration, nutrient access and promotes seedling growth. The community was starting to see the benefits, and school children even started to make casts of the bandicoot digs.

Bandicoots are ‘ecosystem engineers’ that dig soil. Loosening the soil increases water filtration, nutrient access and promotes seedling growth. The community was starting to see the benefits.

Pleased with the success on Churchill Island, Amy invited the French Island residents to watch the bandicoots in action. She took around 100 residents across on a boat and shone spotlights on the bandicoots at night. This demonstrated to the community what they might expect from an EBB release and helped win them over.

In 2017, the EBB Recovery team also established a population on Phillip Island. The island provided a large fox-free habitat for the 67 EBBs released – that in the following years, grew to over 300. This gave Amy confidence that a release on French Island would also be successful.

Two years ago, with the help of peanut-butter-and-oat traps, her team collected bandicoots from Phillip Island and Churchill Island and released them the following night along with a handful of captive-bred bandicoots. Side-by-side with local volunteers, they released about 50 bandicoots to start a new population.





The EBB Recovery Team worked together with French Island locals to transport and release bandicoots in their new home on the island.

This year, the EBB Recovery Team returned their focus to mainland. In Dunkeld and Skipton, bandicoots are now roaming free on private reserves under the watch of guardian dogs. Harnessing the power of guardian dogs to protect sheep from predation, by simply training dogs to not approach bandicoots, they can all live together.

'The dogs create a landscape of fear,' says Amy. Foxes do not hunt on lands protected by dogs and instead move

quickly through the area. This negates the need for fences. Although, some private companies with predator-proof fences are happy to provide land for conservation. Last November some bandicoots were released at Tiverton, a 1000-hectare working sheep farm and the biggest fenced reserve in the state. The future of agriculture and conservation working together hence opens the possibility of farming lands across the state being used to protect endangered species.

The EBB is well on the way to recovery. Populations now persist in several safe havens, scattered across the state 33 years on from inception of the EBB Recovery Team. This provides hope that with persistence and dedication, collaboration between organisations, remarkable leaders (like Amy) and community engagement, we can save them and other threatened species from extinction.

EBB are well on their way to recovery and can now be found in safe havens across Victoria on fox-free lands or under the protection of dogs. They won't go extinct on Amy's watch – in fact, she hopes that she will one day be out of a job!

Amy hopes that one day she will be out of a job once EBBs are no longer considered endangered (at which point she will move on to save another species!).



# Donation form



Please allocate my donation to the following program areas:

RSV 2020 FUNDRAISING CAMPAIGN AMOUNT	AMOUNT
The Area of Greatest Need, as identified by the Society's Council	\$
Inspiring Victoria – Community Science Engagement Program	\$
Science Awards & Prizes	\$
Science History & Heritage	\$
Science for All - Citizen Science Programs	\$
BioQuisitive Community Lab	\$
The Phoenix School Program	\$
The BrainSTEM Innovation Challenge	\$
Australian Indigenous Astronomy	\$
<b>TOTAL</b>	<b>\$</b>

## Personal Details

Family name: \_\_\_\_\_

Given names (in full): \_\_\_\_\_

## Payment Details

Title (circle one): Prof Dr Mr Mrs Ms Miss Other

Method of payment (select one below):

Credit Card WE DO NOT ACCEPT DINERS OR AMERICAN EXPRESS

VISA  MasterCard  PLEASE CHARGE THE AMOUNT ENTERED AGAINST 'TOTAL' DONATIONS ABOVE TO MY CREDIT CARD.

Card No.:                  Expiry Date:   /

Name on Card: \_\_\_\_\_ Signature of Card Holder: \_\_\_\_\_

Cheque or Money Order

I enclose my cheque or money order made out to **The Royal Society of Victoria**.

## Electronic Funds Transfer (EFT)

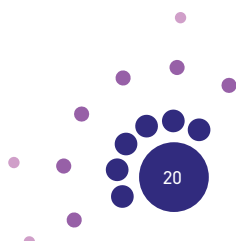
I have transferred my donation to the Royal Society of Victoria as follows:

**BSB:** 083-019

**Account No:** 51-515-2492

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

**Reference:** Your Surname and "donation"



## NOMINATION FOR ELECTION TO RSV COUNCIL 2022-2023

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We hereby nominate \_\_\_\_\_  
 of (address) \_\_\_\_\_

who is a member of the Society, for the position of:

### Ordinary Councillor

I consent to the above nomination.

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

Date \_\_\_\_\_

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

#### Nominated by:

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

Address \_\_\_\_\_

#### Seconded by:

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

Address \_\_\_\_\_

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

**Please use a separate form if nominating more than one member for a position. Only one nomination per officer position and five nominations for the ordinary councillor positions will be accepted per nominating member. Further forms are available online from <https://rsv.org.au/rsv-council-nomination-form-2022-23/>.**

### **Nomination criteria & guidelines:**

- Nominees for Officer or Councillor Positions must be Financial Members of the Royal Society of Victoria at the closing date of nominations and, in accepting nomination, undertake to maintain their RSV membership status throughout the election process and any subsequent tenure on the RSV Council.
- Nominations may only be made and seconded by Members of the Society who are financial at the closing date of nominations.
- A member may be nominated for only one Officer or Councillor position.
- The nomination, including the consent of the candidate, must be accompanied by a statement of not more than 200 words in length prepared by the candidate or the nominator. Any statement exceeding 200 words will render the nomination invalid.
- Each statement must be submitted on plain paper; company or business letterhead will not be accepted. An electronic copy as a Word document must also be lodged with the Returning Officer via: [rsv@rsv.org.au](mailto:rsv@rsv.org.au)
- All nomination forms and statements must reach the Returning Officer, c/o The Royal Society of Victoria, 8 La Trobe Street, Melbourne 3000 by 3.30 pm on 20th December 2021, this being the closing time and date for nominations. These can be received via email to [rsv@rsv.org.au](mailto:rsv@rsv.org.au) .
- A candidate may withdraw from the election for any of the positions for which he or she has been nominated.
- In the event of uncontested positions, the Returning Officer will declare the results for those positions immediately; and state that an election for these positions is not required. Results will be published on the Society website and in the Newsletter distributed for February 2022.
- If more than one nomination is received for any Officer, the Returning Officer must conduct an election for that position.
- If there are more nominations than the number of vacant Ordinary positions of Council, the Returning Officer must conduct an election for all of the vacant positions.
- A notice of the calling of an election and ballot papers will be circulated to financial members with the Newsletter for February 2022. The Notice will be placed on the Society's website and on the notice board in the Society's premises displaying the nomination forms.
- The notice of the election and Ballot Paper sent to members will be accompanied by the nominee's 200-word statement. These will be the only election materials authorised by the Society.