



THE UNIVERSITY OF  
MELBOURNE

# *BOTANY FOUNDATION* ANNUAL REPORT 2019





# BOTANY *FOUNDATION*

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*The University of Melbourne Botany Foundation  
supports the discipline of Botany – the study of plants  
and plant processes.*

The Foundation supports excellence in education and research in the School of BioSciences through:  
student awards and scholarships, early career postdoctoral awards and fellowships, a Professorial Chair, seed grants, and a partnership with the Royal Botanic Gardens Victoria. Plant science contributes to Australia's national science and research priorities and capacity building in the areas of biosecurity, agriculture and food production, the environment, biodiversity classification and conservation, and health.



# CONTENTS

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## **BOTANY FOUNDATION**

Supporting plant science	2
Botany Foundation Board Members 2019	4
Report from the Foundation Board Chairman	5

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## **THE ADRIENNE CLARKE CHAIR OF BOTANY**

Professor Michelle Watt to lead research on plant root physiology	6
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## **SUPPORTING STUDENTS**

2019 Foundation awards to students	7
Botany Prize winner Harvey Orel	7

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## **STUDENT RESEARCH**

Investigating the phylogeography of Mallee-Box eucalypts with disjunct distributions in south eastern Australia <i>By Patrick Fahey (shared, Sophie Ducker Scholarship)</i>	8
Photosynthesis in the green alga <i>Ostreobium</i> <i>By Marisa Pasella (shared, Sophie Ducker Scholarship)</i>	9
Understanding how plant cell walls are made using a common liverwort <i>By Hee Sung (Fiona) Kang (G.A.M. Scott Research Award)</i>	10
Forecasting redistribution of biodiversity under environmental change <i>By David Uribe (David H. Ashton Scholarship)</i>	11

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## **EARLY CAREER PLANT SCIENCE RESEARCH**

Travel awards promote research networking	12
Women in Science for the Environment Fellowship awarded to Dr Natalie Briscoe	13
Early Career Researcher appointed to the Plant Systematics Research Fellowship	14

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## **FOUNDATION FUNDS**

V Sarafis Research Fund sponsors OzBryo conference	15
Herbarium Fund supports student volunteers to spend a semester curating the Victorian School of Forestry Collection	16
Gifts received in 2019	17
Foundation Financial Summary 2019	18

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*Front cover image: Marchantia berteroana*

*Images of Bryophytes, including liverworts and mosses, by Dr David Meagher and Dr Daniel Ohlsen*





# BOTANY FOUNDATION *BOARD MEMBERS 2019*

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*Dr Tony Gregson AM FTSE, External Chairman*

*Professor Pauline Ladiges AO FAA, Deputy Chairman*

*Ms Sally Browne AM, External Member*

*Ms Hayley Buchanan (to June), Student*

*Professor Adrienne Clarke AC FAA FTSE, External Member*

*Professor Aleks Owczarek, Dean Faculty of Science*

*Associate Professor Alex Johnson, School of BioSciences*

*Associate Professor John King AM, External Member*

*Ms Kia Matley (from June), Student*

*Associate Professor Ed Newbigin, School of BioSciences*

*Professor Ute Roessner, Head School of BioSciences*

*Supported by Ms Penny Fairbank, Advancement,  
Faculty of Science*

# REPORT FROM THE FOUNDATION *BOARD CHAIRMAN*

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The Foundation's investment income continues to support students through scholarships, and plant science research through postdoctoral travel grants and fellowships for early career researchers. At year-end, the Botany Foundation and Adrienne Clarke Chair Trust accounts reached a total of \$8.88 million.

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## Funding Students and Early Career Researchers

Our 2019 Annual Report highlights the varied and significant research of the School's postgraduate students in plant science that the Foundation is proud to support through our endowed awards.

Three early career researchers were awarded funding to attend national and international conferences presenting their work on plant species taxonomy and conservation, woodland ecosystem modelling, and soil carbon storage in wetlands, enabling them to exchange ideas and network with colleagues.

The Women in Science for the Environments (WISE) Fellowship was awarded to Dr Natalie Briscoe whose research aims to determine which modelling methods are best at forecasting changes in species distributions over time (p.13).

Through our partnership with the Royal Botanic Gardens Victoria (RBGV), the Pauline Ladiges Plant Systematics Fellowship was advertised internationally this year and attracted outstanding applicants. Dr Todd McLay (p.14), currently a postdoctoral fellow in CSIRO, will be taking up this jointly funded Fellowship in January 2020, and will spend time at both the University and RBGV, contributing his skills in genomics to research projects on various Australian plant groups.

## The Adrienne Clarke Chair of Botany

The Board of the Foundation is pleased to report that, following an international search, Professor Michelle Watt has accepted appointment to the prestigious Adrienne Clarke Chair of Botany, which became vacant when the first holder of the Chair, Professor Mark Burgman, moved to London. The Chair Trust is providing 50% of the professorial salary, matched by the School of BioSciences. The School, Faculty of Science and University are also providing significant set-up funds.

Michelle is Professor of Crop Root Physiology at the University of Bonn and a Director of the Plant Sciences Institute at the Helmholtz Juelich Research Centre in Germany (see p.6). Her research into the structure, function and dynamics of plant roots will be very valuable for Australia, particularly for agriculture, and we look forward to Michelle establishing her research group in early 2020.

I am most grateful for the continued support of our donors and alumni in continuing to build our endowment funds for the future of plant science, particularly the Adrienne Clarke Chair Trust, student scholarships and the Herbarium Fund. I would also like to thank members of the Board for their enthusiasm and management of the Foundation.



**Dr Tony Gregson AM FTSE**  
Chairman, Botany Foundation



# PROFESSOR MICHELLE WATT *TO LEAD RESEARCH ON PLANT ROOT PHYSIOLOGY*

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The Adrienne Clarke Chair of Botany honours distinguished plant scientist Laureate Professor Adrienne Clarke AC FAA FTSE and is supported by a University Trust established with funds from The University of Melbourne Botany Foundation. The Chair is to be held by an internationally outstanding plant scientist who will provide academic leadership in research and teaching.

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The Chair was advertised widely in early 2019, and attracted applications from various countries including Australia, Brazil, Canada, Fiji, Germany, India, Netherlands, Pakistan and the USA.

The Botany Foundation and School of BioSciences are delighted that Professor Michelle Watt has accepted the position, to commence during 2020. The School, Faculty of Science and the University are providing significant additional funds to establish Michelle's research.

Michelle Watt is Professor of Crop Root Physiology at the University of Bonn and a Director of the Plant Sciences Institute at the Helmholtz Juelich Research Centre in Germany. She leads the Root Dynamics Group, and their aim is to discover how root-microorganism dynamics can be optimised with genetics or management to save water, land and fertiliser in agricultural and natural systems. Michelle and her colleagues develop and apply field and laboratory non-destructive phenotyping with microscopy and 'omics' to discover mechanisms and to integrate whole plant processes in quantitative models.

Michelle completed her BSc Hon and MSc in Canada and her PhD in Australia at the Australian National University (ANU). After a teaching and research postdoctoral fellowship at the ANU, she joined CSIRO in Canberra from 2001 to 2015 to improve wheat roots for greater water use efficiency, and subsequently moved to Germany. Michelle has led projects around the world with private and public funding sources, and is the President of the International Society of Root Research.



 Michelle Watt, Professor of Crop Root Physiology at the University of Bonn and a Director of the Plant Sciences Institute at the Helmholtz Juelich Research Centre in Germany



# 2019 FOUNDATION AWARDS TO STUDENTS

The Botany Foundation provides financial awards to support postgraduate and undergraduate students in plant science. This year 30 students applied for the competitive postgraduate awards, some of which have been shared between two equal applicants. Scholarships can greatly assist students personally and be used towards their research projects (titles shown here).

## BOTANY PRIZE

**Harvey Orel**

## DAVID ASHTON TRAVEL AWARD

**Martin Lockett** “Trophic effects of artificial light at night on psyllid colonization rates in *Eucalyptus* trees”

## DAVID H ASHTON SCHOLARSHIP

**SHARE: Simon Kapitza** “Improved land-use change modelling for global assessments of biodiversity change in response to socioeconomic pressures” and

**David Uribe** “Predicting redistribution of species and communities under environmental change: Improving reliability of predictions across time”

## SOPHIE DUCKER SCHOLARSHIP

**SHARE: Marisa Pasella** “Photosynthesis in the green alga *Ostreobium*” and

**Patrick Fahey** “Phylogeography and taxonomy of mallee-box eucalypts in south-eastern Australia”

## MEGAN KLEMM POSTGRADUATE RESEARCH AWARD

**SHARE: Xiang (Zoe) Li** “Exploring sugar signalling by chemical genetics in *Arabidopsis*” and

**Yingxuan Ma** “Investigating the influence of Fasciclin-like Arabinogalactan proteins (FLAs) on secondary cell wall development in *Arabidopsis* stems”

## BRUCE KNOX PRIZE

**Tal Cohen** – top 4th year, Honours student in 2018

## ETHEL MCLENNAN AWARD

**Giada Tortorelli** “Dissecting the establishment of the symbiotic partnership between algae and animals that powers coral reefs”

## KINSLEY ROWAN MARINE BOTANY PRIZE

**Patrick Crock** – top third year student in marine botany

## G.A.M. SCOTT RESEARCH AWARD

**Hee Sung (Fiona) Kang** “Understanding the functional characteristics of two putative AraT genes and the arabinan biosynthesis pathway in the liverwort *Marchantia polymorpha*”

## JOHN S. TURNER POSTGRADUATE SCHOLARSHIP

**SHARE: Pawel Gluza** “From nucleotide sugars to polysaccharides: How do plants control the delivery of substrates for cell wall biosynthesis and protein glycosylation?” and

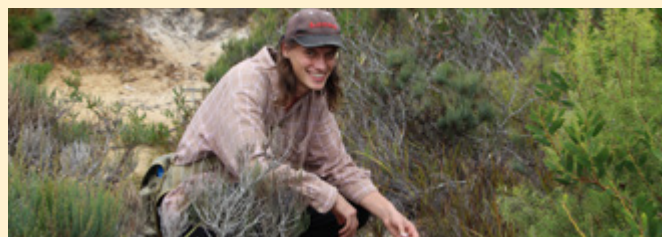
**Joanna Kaptur** “The LEUNIG regulatory complex: How does it control shoot apical meristem formation and its postembryonic activity?”

## GRETNA WESTE PLANT PATHOLOGY AND MYCOLOGY SCHOLARSHIP

**Naima Tasmin** “The impact of the cell wall composition of the plant pathogenic fungus *Leptosphaeria maculans* on host pathogen interactions”

## BOTANY PRIZE WINNER HARVEY OREL

Harvey Orel was the top botany student in his undergraduate cohort, receiving both the E.F. Millar Exhibition Prize for the best performing second year student, and the Botany Prize for third year studies. This year Harvey completed his honours year, researching the phylogeny and phylogeography of the native pea genus *Platylobium* in south eastern Australia. From that he has already published a short paper on the structure of the chloroplast genome in *Platylobium obtusangulum*.



+ Botany Prize winner Harvey Orel

# INVESTIGATING THE PHYLOGEOGRAPHY OF MALLEE-BOX EUCALYPTS WITH *DISJUNCT DISTRIBUTIONS IN SOUTH EASTERN AUSTRALIA*

— By Patrick Fahey, PhD student who shared the Sophie Ducker Scholarship,  
which supports research on Australian flora.

Eucalypts, with well over 800 described species in the genera *Eucalyptus*, *Corymbia* and *Angophora*, dominate most of the forest and woodland communities in Australia.

Despite their ubiquity there is still much we do not know about the evolution of the group, especially factors that have shaped the distribution and diversification of species across the Australian continent.

In my PhD project I am using genetic data to investigate the systematics and biogeographic history of Mallee-Boxes -- multi-stemmed members of the Box and Ironbark group (*Eucalyptus* subgenus *Symphyomyrtus* section *Adnataria*) in south eastern Australia. These species

occur in areas with annual rainfall of 300-600 mm and on shallow soils across parts of Victoria, South Australia and New South Wales. While Bull Mallee (*Eucalyptus behriana*) is a morphologically distinctive species, others that I am studying are not well defined. The *E. odorata* complex, for example, contains between four and thirteen species depending on which classification system is used.

One aim of my study is to resolve the species boundaries and taxonomy in this group by constructing a phylogeny using next-generation sequencing to identify DNA markers from the nuclear genome. Once this is done, I will investigate the genetic relationships between disjunct populations of individual species, and develop hypotheses to explain their historical distributions. By comparing multiple species with similar distributions, I hope to be able to identify a congruent pattern relating to the environmental history of south eastern Australia.

*Patrick is supervised by Dr Frank Udovicic and Prof David Cantrill, Royal Botanic Gardens Victoria, and Dr Michael Bayly, School of BioSciences.*



Patrick Fahey and *Eucalyptus behriana* (Bull Mallee)



# PHOTOSYNTHESIS IN THE *GREEN ALGA OSTREOBIMUM*

— By Marisa Pasella, PhD student who shared the Sophie Ducker Scholarship.  
The late Dr Ducker was a renowned marine botanist.

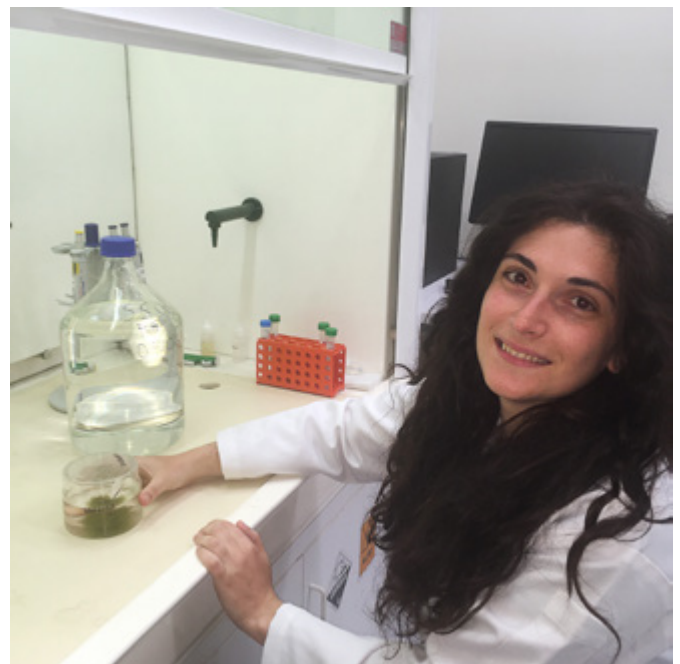
Coral reefs are the result of one of the most important mutualistic associations on the planet – between photosynthetic single-celled algae (zooxanthellae) and the animal polyps that secrete the hard skeleton of coral. But other algae are also associated with corals and *Ostreobium* is one. It is a genus of green algae that lives inside the coral skeleton. In the last few years, a high biodiversity has been reported for the genus with more than 80 species now recognized.

The importance of *Ostreobium* for coral is directly linked to the alga's photosynthesis and its ability to survive under a broad range of light environments. During coral bleaching events when zooxanthellae are expelled, the survival of *Ostreobium* may ensure the provision of an alternative source of energy and photoprotection to the coral.

My project aims to investigate photosynthesis in several strains of one species of *Ostreobium* by using advanced fluorometry techniques and molecular analyses to characterize how this alga responds to different light environments. The funding provided by the Botany Foundation was used to characterise the photosynthetic machinery in *Ostreobium* sp. for the first time using these advanced methods, with collaborator David Suggett at the University of Technology of Sydney.

I have shown that there are significant differences among strains of *Ostreobium* sp. in the mechanisms they use to protect themselves, including a high rate of repair of their photosystem. The next step is to investigate the molecular structures of the photosynthetic machinery and how they vary among the different strains. These results combined with the characterization of the photosynthesis of *Ostreobium* will provide valuable information for a better understanding of the role of the different species of *Ostreobium* in coral survival.

Marisa is supervised by Dr Heroen Verbruggen,  
School of BioSciences.



Marisa Pasella with a sample of the green alga *Ostreobium*





# UNDERSTANDING HOW PLANT CELL WALLS ARE MADE USING *A COMMON LIVERWORT*

— By Hee Sung (Fiona) Kang, PhD student awarded the G.A.M. Scott Research Award.  
The late George Scott was one of Australia's best known bryologists.

While we usually associate sugar with cakes or tasty sweets, sugar has another, much bigger role in our everyday lives. That role is as the basic building block of the wall that surrounds each individual plant cell. In the plant cell wall simple sugars are linked together in various ways to make long chains and complex polysaccharides.

Exactly how simple sugars are joined together in a polysaccharide determines its overall properties and that, in turn, influences the properties of the cell wall. The properties of cell walls determine the texture of plant-based foods, the quality of plant fibres used in clothing textiles, and the strength of the wood used in buildings. An apple's crispness, for example, arises from the mechanical properties of its cell walls.

There are major gaps in our knowledge of cell walls, largely due to the complexity of the plants in which cell walls have been studied. The common liverwort, *Marchantia polymorpha*, provides a simpler model plant for research. *Marchantia polymorpha* is a common liverwort, is incredibly resilient, and often considered a weed. But what makes *Marchantia* really useful is its genetic simplicity; while most land plants have many genes with similar functions, *Marchantia* typically only has one per function. When it comes to studying cell walls, that's a huge advantage.

I'm using *Marchantia* to study how the polysaccharide arabinan is made and what it does. Arabinan is interesting because of the role it has in cell wall flexibility and desiccation tolerance. I'm particularly interested in using novel genome editing tools to modify the architecture of individual *Marchantia* cell walls. This ability to manipulate wall composition in predictable ways may in future be used to generate plants that have walls specifically tailored for industrial purposes. Maybe one day *Marchantia* may provide the basis of a new type of agriculture.

Fiona is supervised by Dr Edwin Lampugnani and Professor Staffan Persson, School of BioDSciences.



 *Marchantia polymorpha* grown in the lab



# FORECASTING REDISTRIBUTION OF BIODIVERSITY UNDER *ENVIRONMENTAL CHANGE*

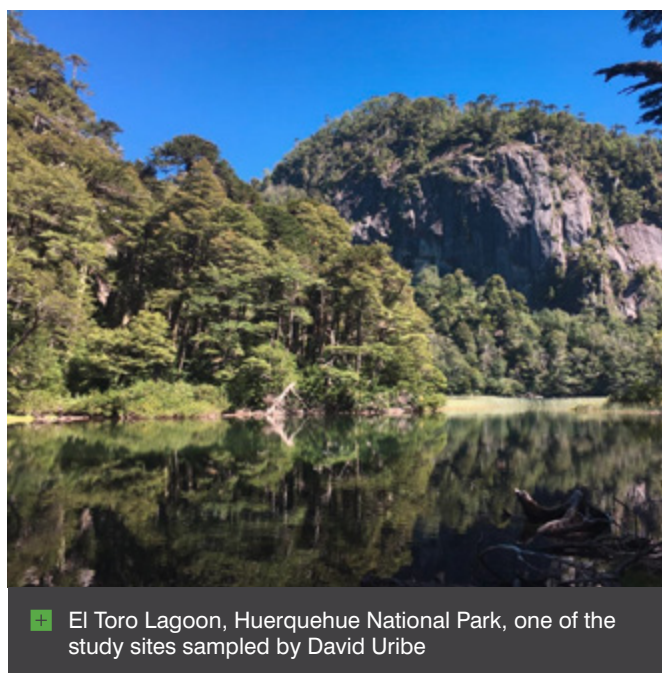
— By David Uribe, who shared the David H. Ashton Scholarship in 2018 and 2019. The late Dr Ashton was an eminent Australian plant ecologist who taught many students in the School of Botany.

In the first chapter of my PhD, I argued that using retrospective forecasting is the most promising way to improve our understanding on the predictive performance of range-change models. I am currently working with Chilean tree and shrub species as a study-case, using a database that gathers over 32,000 unique and geo-referenced botanical records to build assemblage-level range-change models using opportunistic (i.e. potentially biased) presence-only datasets.

I am using past biological and environmental data (1970's) to train the models, and projected them to predict the current distributions of these species. With the financial help of the 2018 David H Ashton Scholarship, I visited over 200 forest remnants and sampled 134 of them to create an unbiased "evaluation dataset". This allows me to compare temporally independent observations with model predictions, as the most rigorous way to assess the reliability of temporal predictions.

This year, the 2019 David H Ashton Scholarship funded my presentation on the Species on the Move conference, held in July at the Kruger National Park, South Africa. There I shared part of my research with some of the most influential researchers on global change ecology, and my contribution attracted a lot of attention. Currently, I am reporting from Chile, where I am working on the evaluation of the models using the unprecedented database I built with the support of the Botany Foundation.

*David is supervised by Professor Brendan Wintle, School of BioSciences.*



El Toro Lagoon, Huerquehue National Park, one of the study sites sampled by David Uribe



## TRAVEL AWARDS PROMOTE *RESEARCH NETWORKING*

The Foundation continued its support for early career researchers to attend national or international conferences where they can exchange ideas and interact with colleagues. Three travel awards totalling \$5,000 were made.

**Dr Rachael Fowler**, who attended the Joint Conference of Australasian Systematic Botany Society and New Zealand Plant Conservation Network, Wellington New Zealand (24-28th Nov. 2019). Rachael presented her research on 'Phylogenetic exploration of Emu bush (*Eremophila*, family Scrophulariaceae), with a focus on using high throughput DNA sequencing to explore species level relationships.

Rachael said "I found discussions at the conference about strategies for working with polyploid plants (that have multiple sets of chromosomes) using contemporary DNA sequencing and analytical methods incredibly valuable. I am looking forward to working collaboratively on this problem with a number of researchers going forward. A second highlight for me was attending a field trip to the coastal Parangarahu lakes and lowland beech forest east of Wellington, where amongst other beautiful endemic plant species, I was able to see field specimens of the New Zealand Ngaio (*Myoporum laetum*), a species of interest to my research of tribe Myoporeae.

**Dr Megan Good**, who attended the Ecological Society of Australia 2019 Annual Conference, Launceston, Tasmania (Nov. 24-29th 2019). Megan presented her research on:

"Validating expert knowledge using field data to create a general ecosystem model for the diverse woodlands of southern Australia".

**Dr Saras Windecker**, who also attended the Ecological Society of Australia 2019 Annual Conference, Launceston Tasmania, (Nov. 24-29th 2019). Saras presented on: "Drivers of soil carbon storage in freshwater wetlands of south-eastern Australia", and she led a workshop.

Saras reported that her primary aim in attending the conference was to help run and teach a full-day workshop in collaboration with Dr Nick Golding, Dr Jian Yen and Dr Daniel Falster as part of the Quantitative Ecology Research Chapter. She said "the workshop aims were to teach reproducible research and coding practices in the programming language, R. We had 20 attendees at the workshop, which is very impressive, considering it was on the same day as the fieldtrips! I also gave an oral presentation on my research into soil carbon storage in freshwater wetlands in the Plant-Soil Ecology Research Chapter session and assisted Dr Ayesha Tulloch during the pre-conference Ecological Forecasting workshop."



+ Rachael Fowler on fieldwork in Western Australia collecting *Eremophila* species for phylogenetic analysis



+ Saras Windecker at the Launceston conference

# WOMEN IN SCIENCE FOR THE ENVIRONMENT FELLOWSHIP *AWARDED* *TO DR NATALIE BRISCOE*

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Income from the WISE Fellowship Subtrust in the Botany Foundation provides an annual grant of \$5,000 to a female early career researcher in the School of BioSciences. The award is to assist her career in ecology or environmental science, with a preference for the area of biodiversity and conservation.

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Dr Natalie Briscoe was awarded the Fellowship for 2019 is using the funds for international travel for collaborative research.

In her application for this award Natalie said that: “My research focuses on understanding why species occur in certain areas and not in others, and on using this knowledge to develop reliable methods for predicting species distributions. My fascination with this question grew from my early research into how climate constrains the distribution of koalas, and how they are likely to be impacted by climate change.

I am interested in the range of tools that people use to predict where species are likely to occur both now and in the future. Predictions of species distributions underpin

many conservation management decisions about invasive species, climate change impacts, and land-use management. But how accurate are they? And can we improve them? Many different modelling approaches have been proposed. Yet very few studies have evaluated how reliable these different methods are for different species, management applications, and with different amounts of data. To test this, I am collaborating with international experts in different methods to test models across the same set of case studies and simulated datasets. This will allow me to determine which methods are best at forecasting changes in species distributions over time. I will also test the type and amount of data required for each approach. This is critical, because often data required to build these models are limited, and costly or difficult to collect.”



 Natalie Briscoe



# EARLY CAREER RESEARCHER APPOINTED TO THE *PLANT SYSTEMATICS RESEARCH FELLOWSHIP*

*A partnership with the Royal Botanic Gardens Victoria*

The Pauline Ladiges Plant Systematic Research Fellowship is a joint position funded by the Botany Foundation and the Royal Botanic Gardens Victoria (RBGV). The first Fellow appointed, Dr Tanja Schuster, finished her five-year fellowship and moved to a position in Germany. The Fellowship was advertised during 2019 and attracted a strong field. The successful candidate was Dr Todd McLay.

Todd has nine years of research experience and publications in plant evolution, particularly in the use of genomics and high through-put sequencing to study plant speciation, phylogenetic relationships and taxonomy. He completed his Masters degree at the Institute of Molecular BioSciences, Massey University, New Zealand, and his PhD at The University of Melbourne, finishing in August 2017. Since then he has been a post-doctoral fellow at CSIRO in the Australian National Herbarium in Canberra, working on the systematics and evolution of Australian Hibisceae.

Todd will commence his Fellowship in January 2020 and maintain an interest in the Hibiscus project with his collaborators in CSIRO. Over the next three years he will work 50% of his time on applying genomic technology to researching the genetic variation and biogeography of eucalypts in northern Australia as part of a large project funded through Eucalypt Australia and led by Dr Michael Bayly (School of BioSciences) and Professor David Cantrill (RBGV).



 Todd McLay in the Australian National Herbarium



# V SARAFIS RESEARCH FUND SPONSORS *OZBRYO CONFERENCE*

The V Sarafis Research Fund in the Botany Foundation provided financial support for a 2-day workshop, ‘OzBryo’, for bryophyte researchers in the Asia-Pacific region. The late Vassilios Sarafis was a biologist, microscopist and physicist and a regular donor to the Foundation. He left a lasting bequest for an endowment to support work on bryophytes, ferns, gymnosperms and algae.

The first meeting of its type in Australia, ‘OzBryo’ was organised by Dr Edwin Lampugnani (School of BioSciences), together with Professor John Bowman FAA (Monash University). It was held in the School of BioSciences on 1-2 December 2019 as a satellite meeting of the Australian Society of Plant Scientists (ASPS) conference held at La Trobe University.

The purpose of the workshop was to exchange the latest research findings and foster scientific collaboration among bryologists. More than sixty people attended from five countries representing 20 different institutions. Funding from the Botany Foundation enabled the eminent bryophyte researcher, Professor Kimitsune Ishizaki

from Kobe University in Japan, to attend. In addition to speaking at OzBryo, Professor Ishizaki also presented his work at the ASPS conference, attended by more than 250 plant scientists, and together with Professor Bowman ran a short workshop on how to work with bryophytes in the lab, an event that did much to stimulate the interest of students and early career researchers who participated.

Research areas covered at the OzBryo meeting included the use of the liverwort *Marchantia polymorpha* as a model system for studies of the cell wall, plant development and the evolution of land plants, as well as talks that described the diversity and phylogeny of Australian mosses and liverworts.



 Some of the participants in the OzBryo conference



# HERBARIUM FUND SUPPORTS STUDENT VOLUNTEERS TO SPEND A SEMESTER CURATING *THE VICTORIAN SCHOOL OF FORESTRY COLLECTION*

— By Dr Jo Birch, MELU Herbarium Curator

In August 2019, The University of Melbourne Herbarium (MELU) received the Victorian School of Forestry Collection (VSF) for accession into the Parkville Herbarium, bringing together all of the University of Melbourne herbarium collections, including the Burnley Horticultural College Collection, into a single location.

The VSF Collection has received a lot of attention during the first four months in its new home. Funding, provided by the 'Herbarium Fund' in the Botany Foundation and The Russell and Mab Grimwade Miegunyah Fund, has enabled supervision of student involvement and training in all aspects of curation, including specimen conservation, data digitisation, and generation of high-resolution specimen images.

The VSF Collection contains approximately 5,500 specimens collected between 1877 and 1992. Significantly, 900 specimens were collected between 1893 and 1919 by H.B. Williamson, who was the Honorary Keeper of the University of Melbourne Herbarium from 1929-1931; 28 specimens are attributed to Ferdinand von Mueller, the Victorian State Botanist (1853 onwards) and Director of the Royal Botanic Gardens Victoria (1857-1873), and his assistants; and 70 specimens were collected by James (Jim) H. Willis, a student at the Victorian School of Forestry from 1927 to 1930, who served as Assistant Government Botanist, and Acting Director of the National Herbarium of Victoria (1937-1972).

With involvement of students interested in botany, 800 specimens have been curated and digitised to-date. In addition, a computer science student, working as an intern in the collection, handled the bioinformatics for the transfer of the data into the Herbarium collection management database. Volunteers manually checked each data record against those on the herbarium specimen to ensure that the data were accurate, which is

an important quality control step as all MELU specimen data are subsequently provided to national (Australasian Virtual Herbarium, AVH) and international (Global Biodiversity Information Facility, GBIF) repositories to enable accessibility.



Volunteers in the Herbarium. The MELU collection can be accessed in person or online via the Online data portal ([online.herbarium.unimelb.edu.au](http://online.herbarium.unimelb.edu.au)).

# GIFTS RECEIVED *IN 2019*

## **ADRIENNE CLARKE CHAIR**

Adrienne Clarke AC

## **UNRESTRICTED RESEARCH\***

Larry Abel  
John Anderson  
Anonymous  
Burcu Buyuksar  
David Chambers  
Michael Collins  
Sarah Craig  
Chandana De Silva  
Gabriel Dias Cesario  
Eduardo Flores-Sandoval  
Les Garrad  
Carolyn Grant  
Richard Groves  
Kim Harkin  
Brigid Harradine  
Anette Johannessen  
Jenny-Maree Kardaras  
John King AM  
Hai Nguyen  
Kim Phua  
Liz Pommer  
Anita Poon  
Patricia Reinher  
Sara Riddle  
Andrew Seeger  
Margaret Smith  
Lynne Taechapinikit  
Kylie White  
Dylan Zhou

## **DAVID ASHTON TRAVEL AWARD**

Caitlin Selleck

## **DAVID H ASHTON SCHOLARSHIP**

Leon Costermans

## **SOPHIE DUCKER POSTGRADUATE SCHOLARSHIP**

Juliet Flesch  
Ann Rusden  
Richard Tudor OAM

## **MEGAN KLEMM RESEARCH AWARD**

Neil Hallam

## **PAULINE LADIGES PLANT SYSTEMATICS RESEARCH FELLOWSHIP**

Winifred Calder  
Leon Costermans  
Gareth Nelson  
Jenneth Sasse  
Jennifer Steinicke

## **ETHEL MCLENNAN AWARD**

Donald Gaff

## **PLANT SYSTEMATICS RESEARCH FUND**

Pauline Ladiges AO  
Mary Playford

## **PROTIST SYSTEMATIC RESEARCH FUND**

Roberta Cowan  
Helen Kershaw

## **KINGSLEY ROWAN MARINE BOTANY PRIZE**

Jenneth Sasse

## **JOHN S. TURNER POSTGRADUATE SCHOLARSHIP**

Anonymous  
Donald Gaff  
Peter Turner

## **GRETNA WESTE PLANT PATHOLOGY AND MYCOLOGY SCHOLARSHIP**

Alexander Idnurm

## **THE FERN RESEARCH FUND**

Margaret Regan

## **V SARAFIS RESEARCH FUND**

Oliver Bonaccorso  
Estate of Vassilios Sarafis  
Tom Fisher  
David Smyth

## **THE UNIVERSITY OF MELBOURNE HERBARIUM FUND**

Anonymous  
Michael Bayly  
Tony Gregson AM  
John Harrison  
Pauline Ladiges AO  
Susan Morgan  
Gareth Nelson  
Janet Schapper

## **WOMEN IN SCIENCE OF THE ENVIRONMENT (WISE) FELLOWSHIP**

John Harrison  
Cecilia Myers

*\*Includes the Pollen Count*






# FOUNDATION FINANCIAL SUMMARY 2019

	Balance at 01.01.2019 (\$)	Income <sup>1</sup> (\$)	Awards & Expenses <sup>2</sup> (\$)	Revaluation <sup>3</sup> (\$)	Balance at 31.12.2019 (\$)
<b>Adrienne Clarke Chair of Botany Trust<sup>4</sup></b>	<b>3,669,939</b>	<b>163,280</b>	<b>-4,007</b>	<b>322,472</b>	<b>4,151,684</b>
<b>Botany Foundation Trust</b>					
Unrestricted Funds <sup>5</sup>	1,179,894	53,076	-25,884	98,798	1,305,884
David Ashton Travel Award	44,742	1,867	-1,645	3,607	48,571
David H Ashton Scholarship	125,652	5,996	-5,931	10,537	136,254
Sophie Ducker Postgraduate Scholarship	73,627	4,644	-3,077	6,208	81,401
Megan Klemm Research Award	105,524	4,635	-3,911	8,922	115,170
Bruce Knox Prize	41,166	1,712	-1,543	3,433	44,769
Pauline Ladiges Plant Systematics Research Fellowship <sup>4</sup>	1,212,056	56,633	-796	100,114	1,368,008
Ethel McLennan Award	57,810	2,527	-2,060	4,824	63,102
Plant Systematics Research Fund	275,036	13,015	-10,084	22,635	300,602
Protist Systematic Research Fund	58,641	5,571	-2,716	4,786	66,282
Kingsley Rowan Marine Botany Prize	23,984	1,184	-925	1,961	26,204
G.A.M. Scott Research Fund	130,273	5,513	-4,938	11,125	141,973
John S. Turner Postgraduate Scholarship	83,241	4,995	-4,087	6,965	91,113
Gretna Weste Plant Pathology and Mycology Scholarship	37,438	1,684	-1,440	3,196	40,879
The Fern Research Fund	32,597	1,845	-34	2,667	37,076
V Sarafis Research Fund	58,464	11,277	-2,038	4,964	72,668
The University of Melbourne Herbarium Fund	583,609	39,647	-10,625	48,672	661,303
Women in Science of the Environment (WISE) Fellowship	111,618	5,652	-116	9,267	126,420
<b>Botany Foundation Trust – Total</b>	<b>4,235,373</b>	<b>221,474</b>	<b>-81,849</b>	<b>352,681</b>	<b>4,727,678</b>
<b>Total of the Two Trusts</b>	<b>7,905,312</b>	<b>384,754</b>	<b>-85,856</b>	<b>675,153</b>	<b>8,879,362</b>

## NOTES

1. Income includes donations and earnings on investments
2. Expenses include administration charges
3. Revaluation amounts represent the change in unit price of the capital units during 2019 of respective Trusts
4. Chair and Fellowship positions vacant in 2019
5. Unrestricted Funds support research initiatives, the pollen count, travel awards and events





*For information on how  
to donate, visit the Botany  
Foundation website at*

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*[science.unimelb.edu.au/engage/  
giving-to-science/botany-foundation](https://science.unimelb.edu.au/engage/giving-to-science/botany-foundation)*





## FOR FURTHER ENQUIRIES

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