



From the Director

Well here we are – nearly the end of year. I don't know about you all but it seems to me that we have accelerated though November with a frenzy of conferences, workshops, meetings, ongoing building and infrastructure projects and efforts to complete tasks before the end of year break.

All of this activity reflects a Research School at the top of its game in teaching and research. This is reflected in the awards, grants and PhDs awarded as listed in the following sections. To add to that, I'm delighted to share with you all news of 12 recent promotions of academic staff:

- Level A to B: Annamaria De Rosa, Julian Greenwood
- Level B to C: Andrew Scafaro, Christina Spry
- Level C to D: Megan Head, Dan Noble, Simon Williams, Lucy Aplin, Marcin Adamski
- Level D to E: Dani Way, Maja Adamska, Caitlin Byrt

This is just a wonderful way to end the year. My congratulations to all and my thanks to all those students and staff who have supported these people.

Since my last message we have also welcomed a new Group Leader in BSB – Wai-Hong Tham. Wai-Hong will provide further stimulus to our already strong molecular parasitology group and much more besides. Watch this space.... And there is more. I'm really pleased to announce to all that RSB, together with CEAT, has recruited Alison Bentley, an award-winning plant scientist with a global program in translating fundamental research to crop improvement. Alison will commence her dual role as a Group Leader in PS and as Deputy Director of CEAT from January 2nd.

On November 22-23, we had a very successful Group Leader Retreat at Wildbark, the Mulligan's Flat Visitor centre. We had over 40 Group Leaders present each day with deep dives into the ongoing discussions around current and emerging Research Priorities and infrastructure needs, undergraduate teaching and PhD supervision. Each of these were great, but I think all agreed that the highlight was a series of Flashtalks on research ideas from our recent recruits. Really cool stuff. I also lead a Faculty meeting where we discussed various matters, including forthcoming budget cuts. Argh. The slide deck for the Q4 Faculty meeting can be found [here](#) and a report on outcomes from REB Exec for Q4 is [here](#).

That's it from me for this year. I hope you all take a real break over the December – January period and come back invigorated for 2024.

Welcome

Welcome to **Wai-Hong Tham** who is a new Group

Leader in the BSB division. Wai-Hong Tham received her PhD from Princeton University and her B.A. from University of California, Berkeley. She also holds a joint appointment at WEHI as a Lab Head in the Infectious Diseases and Immune Defense Division and is co-Chair of the WEHI Biologics Initiative. Make sure you give her a warm welcome when you see her around RSB!

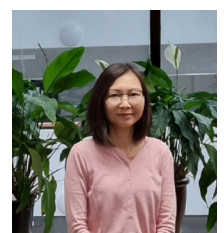
2023 Research School of Biology Summer Research Interns and Scholars



Welcome to the RSB 2023/24 Summer Research Program Interns and Scholars. Their program will run from the 20th of November until the 19th of January. Please give them a warm welcome when you see them around the RSB.

Welcome back to **Tomas Fuenzalida** (Ball Group, PS) who will be visiting RSB from 14 Nov – 22 Dec 2023 to work with Marilyn Ball on dynamic water relations of mangroves in response to changing salinity.

Welcome to **Angela Chan**! Angela started as the new BSB Divisional Administrator on the 9th of October. Angela comes to us with significant administration experience in the healthcare, corporate, government and media sectors. Although Angela had not worked in a university setting before, she has settled in well already and is enjoying the challenges her new position brings.



Grants awarded

Dr Richard Poire (APPF Research Fellow, PS) was awarded \$166,117 from Australia's Economic Accelerator (AEA) Seed Grants with total grant value of \$421,323. This AEA investment will support Richard's research project on developing non-invasive imaging tools to identify

recombinant protein expression in plant-based molecular farming.

Ben Corry (BSB) was awarded the Australia-Germany Joint Research Cooperation Scheme from UA-DAAD with a total grant value of \$25,000.

Ulrike Mathesius (PS), **Ute Roessner** (PS), **Barry Pogson** (PS) and **Maja Adamska** (BSB) were awarded a Linkage Infrastructure, Equipment and Facilities 2024 grant from the ARC, in an externally led application, with a total grant value of \$931,950.

Congratulations

You Zhou and **Chun-Chieh Liao** (Magrath Group, E&E) were both awarded Early Career Researcher Awards at the International Bioacoustics Association Congress held in Sapporo, Japan, after a tied vote. Congratulations to both! You presented her work on how noise may compromise acoustic communication in birds, co-supervised with Andy Radford at the University of Bristol, while Chun-Chieh spoke about his first experimental study of acoustic communication in white-winged choughs, co-supervised by Andy Radford as well as Rob Heinsohn in the Fenner School of Environment & Society.

Congratulations to **Robert McArthur** (Huttley Group, E&E) who won "Best Talk" at Phylomania for his honours research "Spectral Cluster Supertree: A fast and accurate supertree method for rooted trees".

Congratulations to **Caitlin Byrt** who is the 2023 Australian Society of Plant Scientists (ASPS) Jan Anderson Award Recipient.

Professor Jan Anderson was distinguished for her outstanding contributions to the understanding of the molecular organization of the chloroplast thylakoid membrane. The award acknowledges talented plant scientists, and was awarded in recognition of Caitlin's work on testing and engineering membrane transport proteins for a sustainable future. Caitlin presented an award lecture in Hobart at the ASPS meeting on Thursday 30th November.



Congratulations to **Rose Zhang** (Byrt Group, PS) and **Angus Rae** (Mathesius Group, PS) for receiving first and second place respectively for the best student talks at the Australian Legume Symposium 2023.

Congratulations to **Suyan Yee** (Chan Group, PS) who was nominated by ANU to attend the 2024 Global Young Scientist Summit (GYSS), which will be held in Singapore next January.

The GYSS bridges the gap between aspiring researchers and the foremost scientists and technologists of various fields, including recipients of the Nobel Prize, Fields Medal, Turing Award and Millennium Technology Prize. In addition to plenary lectures, panel discussions, Q&A sessions, and networking platforms, GYSS participants will have the opportunity to present their work and visit selected research institutions in Singapore.

Congratulations to **Danielle Way** (PS) and **Damien Farine** (E&E) for their inclusion in the Clarivate Highly Cited Researchers 2023 list, which honours those who have demonstrated significant influence in their research fields.

PhDs awarded

Erin Hill (Solomon Group, PS) *Characterising extracellular vesicles from the wheat pathogen Zymoseptoria tritici*.

Upul Yasantha Nanayakkara Vithanage (Mathesius Group, PS) *Investigation of the role of root flavonoids in the interaction of chickpea with nitrogen-fixing symbionts and parasitic nematodes*.

Hannah Carle (Nicotra Group, E&E) *Complexities of carbon, traits and tree performance in tropical forest*.

Julie Leroux (Pogson Group, PS) *Thesis title is confidential*.

Nay Chi Khin (Pogson Group, PS) *Thesis title is confidential*.

PhDs commenced

Joseph Esimu (Byrt Group, PS)

News

ASBMB2023, the annual meeting of the Australian Society for Biochemistry and Molecular Biology (ASBMB) was held in Kambri on November 15th – 17th. The meeting was chaired by **Colin Jackson** (BSB), with several RSB Faculty on the organising committee, including **Christina Spry** (BSB, co-chair), **Emily Furlong** (BSB, program), **Simon Williams** (PS, venue), **Joe Brock** (BSB, website), **Joe Kaczmarek** (BSB, trade/sponsorship) and **Kai Chan** (PS, EMCR/posters), who were supported by conference organiser Jack Horton (RSC).

The conference show-cased the research of biochemists and molecular biologists from overseas and across Australia, with RSB Faculty **Wai-Hong Tham** (BSB), **Barry Pogson** (PS), **Stefan Broer** (BSB), **Peter Solomon** (PS) and **Denisse Leyton** (BSB) among the keynote/invited speakers. PhD students **Ciara Wallis** and **Elaine Tao** (Corry Group, BSB) and **Alexandra Williams** (Brock Group, BSB) also gave oral presentations, and RSB Faculty/post-docs **Alex Maier** (BSB), **Giel van Dooren** (BSB), **Florence Danilla** (PS), **Stephen Fairweather** (BSB) and **Samantha McGaughey** (PS) contributed by chairing sessions.



Several current and former RSB students also received recognition for their stellar poster presentations at the conference: **Suyan Yee** (Chan Group, PS) won a Society for Redox Research Australasia (SFERRA) poster prize; while **Rachel Leonard** (formerly van Dooren Group, BSB) and **Alice Shin** (Brock Group, BSB) won ASBMB poster prizes. Congratulations to all!

The inaugural combined **RSB HDR – EMCR conference** was held on 24 November.

It was a fantastic conference, with extremely high quality talks, as usual. It was also fantastic to have EMCRs included in most sessions, hopefully for many HDR-EMCR conferences to come. Thank you to all speakers, organisers, volunteers and chairs of sessions.





Congratulations to the Hirota Naora Best HDR Conference presenters **Ciara Wallis** (Corry Group, BSB), **Kate O'Hara** (Moritz Group, E&E) and **Tanya Skinner** (Whitney Group, PS), as well as the Runner up Best HDR Conference presentations by **Rita Tam** (Schwessinger Group, PS), **Chun-Chieh Liao** (Magrath Group, E&E) and **Capella Maguire** (van Dooren Group, BSB).

The ANU iGEM team, **Riley Furbank** (Chan Group, PS), **Yolanda Yau** (RSC), **Anthony Barancewicz** (Jackson Group, RSC), **Sabrina Fu** (Tschärke Group, JCSMR), **Hugh Ashley** (Jackson Group, BSB), **Jasper Lee** (Schwessinger Group, PS), **Olivia Delfino** (JCSMR) and **Jack Dalton** (Jackson Group, BSB), attended the iGEM Grand Jamboree in Paris at the beginning of November. iGEM is an international genetic engineering competition. The team was awarded a Silver medal for its encapsulin based rare earth metal bioaccumulation platform project. The team also had several conversations with biomineral start-ups at the conference who were very interested in applying the platform to lithium mining.



Through October and November, **Timor-Leste Biosecurity Officers** Abel, Delfina, Luisa, Sancha and Jose visited ANU for 6-weeks training in molecular biology and plant biosecurity. Sponsored by a DFAT Australia Fellowship and delivered by **Benjamin Schwessinger** (PS) and **Lydia Murphy** (Schwessinger Group, PS), the training focused on building skills in molecular biology to expand diagnostic and surveillance capabilities in Timor-Leste. The program also included networking events with CSIRO, Plant Health Australia, Department of Agriculture, Forestry and Fishery and NSW Department of Primary Industry. In addition, our Timorese friends enjoyed some cultural experiences such as visits to Sydney, the Australian National Botanic Gardens and Tidbinbilla. Benjamin would like to thank Lydia Murphy for her admirable dedication and delivery.



ANU Research infrastructure Expo was held on 28 November. RSB was represented by **Niccy Aitken** (EBL) and **Charlie Morgan**. Attendance was good and there was much interest in RSB's stand, particularly by prospective HDR students. The portable MinION DNA sequencing device on display received a fair bit of interest.



A one day **Australian Legume Symposium** was held on 14th November 2023 at the ANU, jointly organised by **Uli Mathesius** (PS) and **Michael Udvardi** (UQ). This was the

first of a planned annual series of legume symposia that will alternate between the ANU and UQ, kindly made possible by funds donated by Em. Professor Peter Gresshoff (UQ, formerly also at the ANU), who inspired the idea of invigorating the Australian legume community.

The symposium attracted around 70 participants from several universities, CSIRO, research organisations and industry bodies around Australia, as well as some guest speakers from the Chinese Academy of Science Centre for Excellence in Molecular Plant Sciences. We managed to squeeze 26 talks into a single day (interspersed with lots of coffee). Topics ranged across field phenotyping, GM crops for Africa, breeding for a range of traits, improvement and measurement of nitrogen fixation, seed improvement, molecular regulation of nodulation and root architecture, nitrogen sensing and transport processes.



If you are interested in more legume science, Brisbane will host the 11th International Conference on Legume Genetics and Genomic (ICLGG), 30 September - 3 October 2024.

Papers

Schleussner N, Cauchy P, Franke V, Casarotto MG, Sundararaj S et al. Transcriptional reprogramming by mutated IRF4 in lymphoma. *Nature Communications*. <https://doi.org/10.1038/s41467-023-41954-8>

Kucharski R, Ellis N, Jurkowski TP, Hurd PJ & Maleszka R. The PWWP domain and the evolution of unique DNA methylation toolkits in Hymenoptera. *iScience*. <https://doi.org/10.1016/j.isci.2023.108193>

Schultz M, Southam DC, Buntine M, Howitt S et al. 'Transformative': the threshold learning outcomes for science. *Australian Journal of Chemistry*. <https://doi.org/10.1071/CH23137>

Clark IA & Vissel B. Autocrine positive feedback of tumor necrosis factor from activated microglia proposed to be of widespread relevance in chronic neurological disease. *Pharmacology Research & Perspectives*. <https://doi.org/10.1002/prp2.1136>

Wright AL, Konen LM, Mockett BG, Clark I et al. The Q/R editing site of AMPA receptor GluA2 subunit acts as an epigenetic switch regulating dendritic spines, neurodegeneration and cognitive deficits in Alzheimer's disease. *Molecular Neurodegeneration*. <https://doi.org/10.1186/s13024-023-00632-5>

Guppy M & Fullagar P. An Analysis of the Dawn Vocalisation of a Male Grey Shrike Thrush (*Colluricincla harmonica*). *Australian Zoologist*. <https://doi.org/10.7882/AZ.2023.023>

O'Reilly W & Starrs D. Science citizen: shifting to a "science-first" approach and recognising the trade-offs between objectives in a long-term citizen science program. *Frontiers in Environmental Science*. <https://doi.org/10.3389/fenvs.2023.1270247>

Reiter N, Dimon R, Arifin A & Linde C. Culture age of *Tulasnella* affects symbiotic germination of the critically endangered Wyong sun orchid *Thelymitra adorata* (Orchidaceae). *Mycorrhiza*. <https://doi.org/10.1007/s00572-023-01131-7>

Mirabel A, Girardin MP, Metsaranta J, Way D et al. Increasing atmospheric dryness reduces boreal forest tree growth. *Nature Communications*. <https://doi.org/10.1038/s41467-023-42466-1>.

Smith AB, Ganguly DR, Moore M, Bowerman AF, Pogson BJ et al. Dynamics of mRNA fate during light stress and recovery: from transcription to stability and translation. *The Plant Journal*. <https://doi.org/10.1111/tpj.16531>.

Taleski M, Jin M, Chapman K, Winning C, Djordjevic MA et al. CEP hormones at the nexus of nutrient acquisition and allocation, root development, and plant-microbe interactions. *Journal of Experimental Botany*. <https://doi.org/10.1093/jxb/erad444>.

Beckett HAA, C Bryant, T Neeman, M Mencuccini and MC Ball (2023). Plasticity in branch water relations and stem hydraulic vulnerability enhances hydraulic safety in mangroves growing along a salinity gradient. *Plant, Cell and Environment*, *in press*.