



End of year message from the Director

Well... we made it to the end of 2022. The year has been quite challenging for many in RSB as we navigated the COVID epidemic, building repairs, budget uncertainties and staff turnover.

As the year progressed, I have been really pleased to see a return to our generally positive and interactive environment in RSB. There is a real hum about the place again, culminating in a wonderful end-of-year party with over 300 people, great food and company. My particular thanks to Terri and to the other professional staff who made that happen.



There has also been a plethora of workshops and conferences hosted in, or by, RSB since the end of semester. Again, this is a welcome return to normal academic activity and our EMCRs have been prominent in all events.

Our teaching in Semester 2 has ended well with graduation ceremonies last week. This represents a huge effort from BTLC admin and tech staff, course conveners, instructors and demonstrators, well done all. Now you can breathe for a bit – though it never really stops with various outreach programs now underway.

On the research front, we have ended the year well with strong performance in the ARC Discovery competition (see Nov 27 message) and positive responses from GRDC to tenders submitted by Owen Atkin (PS) and colleagues and to Peter Solomon (PS) and collaborators. Additionally, Adrienne Nicotra (E&E) and her team successfully launched the Australian Mountain Research Faculty last week, with a symposium in the (appropriately freezing) alps and a second event on campus.

I am also pleased to announce that Kai Chan (PS) has won a prestigious Westpac Fellowship to support ongoing work in his group from 2023. Go Kai!

All this points to the fundamental strength of research and teaching in RSB, such that we can look forward to a great year in 2023.

As a taster of what is to come in 2023, I am delighted to announce the recipient of the 2023 Ralph Slatyer Medal, in this instance to Professor Jenny Martin, a highly accomplished molecular biologist who has made major contributions in structural biology and drug design. Jenny is also a strong advocate for equal opportunity and improved gender balance in academia. No doubt her visit will be a highlight in the coming year.

That's it from me – I hope you all have a well-earned break and come back rejuvenated for the exciting year ahead.

Craig

Congratulations

Congratulations to Kai Chan (PS) who won the prestigious 2023 Westpac Fellowship. Kai's project will be developing next-generation tools for climate resilient crops by combining synthetic and chemical biology to harness the elusive molecular secrets enabling iconic Australian native plants to thrive in our harsh landscape.



RSB again celebrated the wonderful achievement of its recent flotilla of PhD graduates by hosting a post-Graduation Ceremony celebratory lunch. Congratulations go to Marc Freestone, Eve Cooper, Tobias Hayashi, Jacinta Watkin, Merryn Fraser, Sashika Richards, Ariel Ivanovici and Tanuka Sen (left to right) along with their family, friends and supervisors who attended. The gifted RSB hoodies were a hit!!



Katherine Caley (Huttley Group, E&E) was awarded best student talk at the Phylomania 2022 Conference (theoretical phylogenetic conference at UTAS). Fred Jaya (Lanfear Group, E&E) was an honourably mentioned second place in Tasmania.



The 'AG-Champs', a group of staff from the Australian Plant Phenomics Facility and CEAT, have earned a Gold award in the 2022 Green Impact program. Green Impact is an international program to promote the UN Sustainable Development Goals, that is delivered locally by Australasian Campuses Towards Sustainability (ACTS). Teams from the education, business, health arts and public sectors can take part.

The AG-Champs initiated a wide range of actions to qualify for their Gold certificate including:

- * Connecting solar panels on APPF's growth capsules to a performance dashboard, so they could better monitor the amount of solar energy being generated;
- * Offering more vegetarian options when catering;
- * Calculating CO2 emissions for business travel and attending conferences virtually if possible;
- * Getting rid of a coffee capsule machine that generated a lot of waste.

Frederike Stock from APPF helped lead the ANU participation and says taking part had benefits for the staff as well as the planet. "It was a lot of fun and got us thinking and talking about how we can make small changes in our daily operations to help reduce our environmental impact," she said. "It shows how making small changes to our daily operations can help reduce our overall footprint." Taking part in Green Impact supports ANU's Below Zero by 2030 mission and the AG Champs appreciated the support of the Below Zero team. Green Impact will kick off again in March 2023 and the AG Champs are keen to continue their efforts.



Photo: ANU Below Zero Engagement Manager Juliet Meyer; Frederike Stock, Richard Poiré, Pip Wilkes, Ming-Dao Chia, (APPF) Director of the ANU Institute for Climate, Energy & Disaster Solutions Mark Howden, and Ning Huang APPF.

Congratulations to Monica Ruibal (E&E) who has jointly won the College of Science Award for 'Service in the Individual Service Contribution' category. Monica has received her award for providing excellent high level technical support in molecular genetics for staff and students. In addition, Monica has taken the lead in managing the School's new mobile laboratory and established herself as the RSB 4WD instructor. Monica has received unanimous praise for her work in each of these areas.



Congratulations to RSB Purchasing and Store staff, who have jointly won the College of Science Award for 'Service in the Team Service Contribution' category. Benjamin Parker-Brown, Jodi Hamilton, Lachlan Sweeting and Brad Rath received their award for providing excellent logistic support to staff and students. The team has also managed the ordering of scientific supplies, equipment and biological material during Covid, which has created a whole range of extra complexities. They have done this care, grace and attention to detail.



Launch of AMRF

The Australian Mountain Research Facility (AMRF, www.amfr.org.au) was launched this week in style. Starting with a day of outreach to celebrate UN International Mountain Day, a ribbon cutting (well, flagging tape actually) ceremony following our symposium with the Australian Institute of Alpine Studies, a day of site tours and finally a local Canberra launch and (a second) ribbon cutting.

The AMRF is an ARC LIEF supported infrastructure project that aims to support research for adaptive management of Australia's high country. Open access datastreams on a wide range of microclimatic and hydrological variables will complement a range of experimental infrastructure. Already being used by researchers from institutions across ACT, NSW, VIC and TAS, the AMRF hopes to catalyse interdisciplinary research collaborations for many years to come.



Welcome

Welcome to **Claudia Londoño Nieto** (University of Valencia, Spain) who is here for several months visiting the Jennions Group (E&E).

The Atkin Group (PS) is pleased to welcome a visiting PhD student from Peking University, **Tianyu Zheng**. Tianyu will be in the Atkin Group for eight months, with support from the Chinese Scholarship Council. He will collaborate on projects looking at the impact of daytime photosynthesis, starch dynamics and nocturnal respiration.



Welcome to **Michael Turnbull** who has joined the BTLC team as a Student Administration Officer.

Farewell

Fraser Scott (IT Services) will leave RSB at the end of the year to take up a position at Digital61. Fraser joined RSB in April, and has been a valued, quietly capable client services team member. We wish him all the best in his new job.



Nanopore sequencing for biosecurity workshop

RSB hosted a biosecurity workshop last month, aimed to contribute to capacity building and establish a community of practice of Nanopore sequencing focusing on biosecurity and eDNA.

Nanopore sequencing has opened up the potential of novel biosecurity applications in every laboratory due to its portability, small foot print, and minimal capital investment required. Nanopore sequencing can be used to reconstruct full genomes, detect pathogens in complex samples, and to trace pathogen evolution in real time as highlighted by the tremendous work on Sars-Cov2 during the pandemic. Yet to fully exploit Nanopore sequencing's potential and to modernise Australian biosecurity we need to build capacity and proficiency for end-users with hands-on workshops in sequencing and data analysis.

The workshop was a great success which was attended by a broad range of people from government and private enterprise with an interest in biosecurity.



Papers

Borrill P, Mago R, Xu T, Williams SJ *et al.* An autoactive NB-LRR gene causes Rht13 dwarfism in wheat. *PNAS*. <https://doi.org/10.1073/pnas.2209875119>.

Chowdhury S, Zalucki MP, Amano T, Jennions MD *et al.* Trends and Progress in Studying Butterfly Migration. *Integrative Conservation*. <https://doi.org/10.1002/inc3.13>.

Cuny H, Bozon K, Kirk RB, Bröer S *et al.* Maternal heterozygosity of Slc6a19 causes metabolic perturbation and congenital NAD deficiency disorder in mice. *Disease models & mechanisms*. <https://doi.org/10.1242/dmm.049647>.

Greenwood JR & Williams SJ. Guarding the central regulator of extracellular perception in plants – A job for two. *Cell Host & Microbe*. <https://doi.org/10.1016/j.chom.2022.11.008>.

Harris RJ, Bryant C, Briceño VF, Arnold PA, Nicotra AB *et al.* A novel and high throughput approach to assess photosynthetic thermal tolerance of kelp using chlorophyll a fluorometry. *Journal of Phycology*. <https://doi.org/10.1111/jpy.13296>.

Howitt SM, Wilson AN & Higgins DM. Unlearning, uncovering and becoming: experiencing academic writing as part of undergraduate research. *Teaching in Higher Education*. <https://doi.org/10.1080/13562517.2022.2145466>.

Kokko H & Jennions MD. Is more always better when it comes to mating? *PLoS Biology*.

McDonald MC, Williams SJ & Solomon PS. The role of tox effector proteins in the *Parastagonospora Nodorum* – Wheat interaction. *Plant Relationships*. https://link.springer.com/chapter/10.1007/978-3-031-16503-0_3.

Schacht R, Beissinger SR, Wedekind C, Jennions MD *et al.* Adult sex ratios: causes of variation and implications for animal and human societies 2022. *Communications Biology*. <https://doi.org/10.1038/s42003-022-04223-w>.

Tong C, Avilés L, Rayor, L.S, Mikheyev, AS *et al.* Genomic signatures of recent convergent transitions to social life in spiders. *Nature Communications*. <https://doi.org/10.1038/s41467-022-34446-8>.

Zozaya SM, Teasdale LC, Tedeschi LG, Moritz C *et al.* Initiation of speciation across multiple dimensions in a rock-restricted, tropical lizard. *Molecular Ecology*. <https://doi.org/10.1111/mec.16787>.

Photographs by Sharyn Wragg